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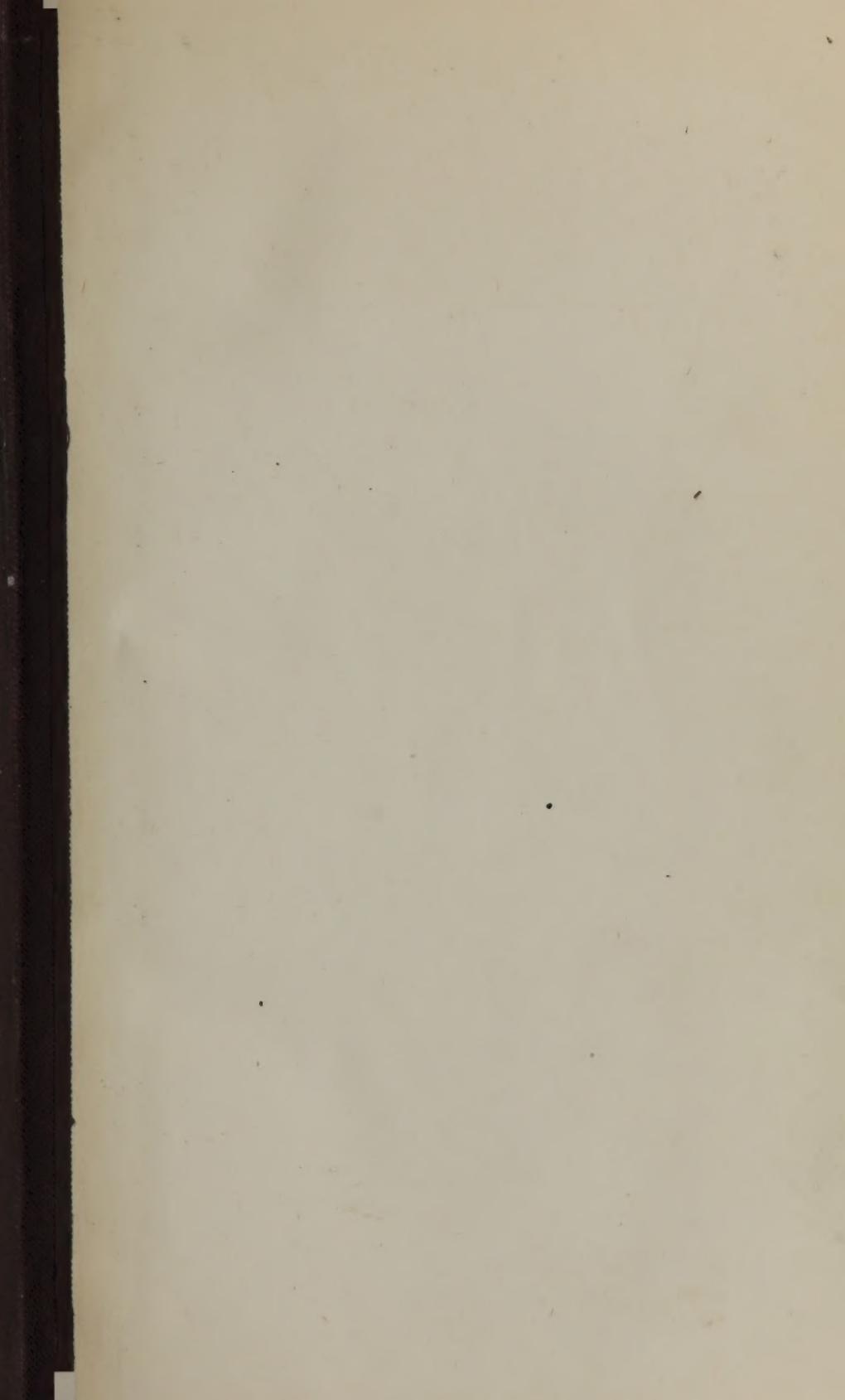


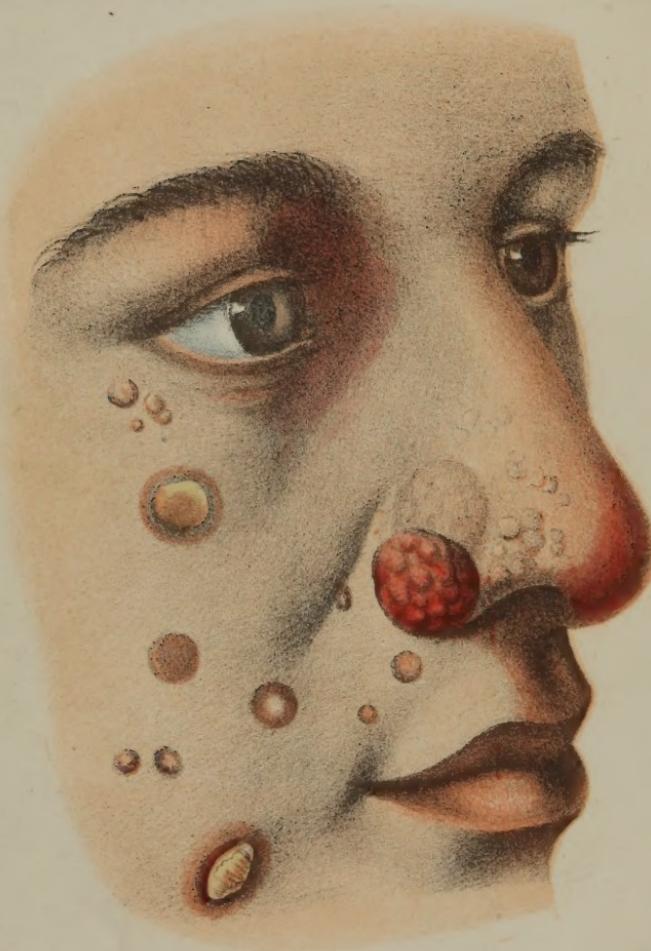
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PRACTICAL TREATISE ON DISEASES

OF THE

URINARY AND GENERATIVE ORGANS

IN BOTH SEXES.

PART I.—NON-SPECIFIC DISEASES.

PART II.—SYPHILIS.

BY WILLIAM ACTON,

LATE SURGEON TO THE ISLINGTON DISPENSARY, AND FORMERLY EXTERNE AT THE FEMALE VENEREAL HOSPITAL, PARIS.

REPRINTED FROM THE SECOND LONDON EDITION,

WITH ADDITIONAL ILLUSTRATIONS, AND COLORED PLATES.

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J. S. REDFIELD, CLINTON HALL,
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P R E F A C E

TO

THE SECOND ENGLISH EDITION.

IN preparing for the press a second edition of this treatise,* the author has found his materials accumulate to such an extent as virtually to render the present volume a new work.

The original scope of his investigations having likewise been considerably extended, and additional chapters on SPERMATORRHEA, IMPOTENCE, INFILTRATION OF URINE, IMPERMEABLE STRICTURE, &c., having been introduced, he has been compelled to alter the title, the previous one having ceased to be sufficiently comprehensive to include the various subjects here treated of.

In carrying out his plan, the author has not merely cited his own experience on the methods of treatment which have been found successful in British or continental hospitals, and employed in private practice during the last fifteen years; but he has drawn largely from the treatises of Astruc and Hunter, as well as quoted freely the most novel doctrines and practical hints contained in the writings of Ricord, Brodie, Prout, and Lallemand.

* Probably no work has ever received a more decided token of approbation from the medical profession of this country than this treatise of Mr. ACTON, three editions having been called for during the short period that it has been before the public. The present edition contains double the amount of matter given in the former work; and, embracing as it does the results of the latest and most reliable investigations made by the distinguished author himself and other eminent English practitioners, and also those of the most celebrated surgeons of France who have made the subject here treated of their special study (among whom MM. Ricord and Lallemand stand confessedly at the head of authorities in the treatment of Syphilis), it is presented to the profession of America with the fullest confidence that it will meet with still greater favor than the previous editions from all who desire to be guided by the most enlightened experience in their practice in this class of diseases.—AM. PUB.

In the present edition, the plates remain unaltered ; as the illustrations have been acknowledged to depict admirably the diseases they were intended to represent, having been chosen from among the thousands of cases witnessed at M. Ricord's clinique. Additional wood-cuts have, however, been introduced in the text, to illustrate several new points ; and a very copious analytical index has been added, as well as a collection of those prescriptions which are most commonly employed.

In thus bringing out a revised and enlarged edition, the author trusts to have carried out the recommendation of one of his former reviewers, who, in a friendly and eulogistic criticism, has observed that “*a complete practical treatise on venereal diseases would be a very valuable, or rather invaluable performance, and perhaps the most acceptable work that could be presented to the medical profession.*”

In accordance with this view of the subject, the author has attempted to make the present volume a text-book for the student, and at the same time to supply data for the surgeon desirous of learning the most modern treatment of the protæan forms of SYPHILIS, as well as materially to assist the practitioner who in the witness-box is liable to be cross-examined on many of the most intricate questions of generation, absorption, or contagion.

No one, at all conversant with the state of medical opinion, can have failed to remark the manner in which the profession appreciates the labors of those observers who are directing their energies to the elucidation of individual branches of medical science.

Few are the authors in the present day who venture to grapple with the entire science of medicine and surgery ; on the contrary, as has been well observed, “the great principle of the division of labor, which may be called the moving power of civilization, is now extended to all branches of science, industry, and art ; and while formerly the greatest mental energies strove at universal knowledge, and that knowledge was confined to the few, now they are directed to specialities, and in these again even to the minutest points.”

In accordance with this general professional feeling, the author has appealed to the microscopist, the chemist, the physiologist, the medical jurist, and to the physician and surgeon, who stands pre-eminent in his respective department, for a corroboration of his opinions ; and he can not conclude these remarks without availing himself of the opportunity of expressing his obligations to Dr. George Gregory, Dr. J. W. Griffith, Dr. Alfred Taylor, Mr. Busk, Mr. Farr, Mr. Paget, and Mr. Stanley, for the valuable assistance they have so kindly rendered him.

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INTRODUCTION.

"It is time to burst through the veil of that artificial bashfulness which has injured the growth, while it has affected the features, of genuine purity. Society has suffered enough from that spurious modesty which lets fearful forms of vice swell to a rank luxuriance, rather than point at their existence—which coyly turns away its head from the 'wounds and putrefying sores' that are eating into our system, because it would have to blush at the exposure."—*Quarterly Review*, 1846. Article on Prostitution.

THE origin and history of Venereal Diseases has probably given rise to greater difference of opinion than any other subject in the whole range of medical literature; but, instead of swelling my work by numerous quotations from the treatises of those who have entered fully into the consideration of this subject, I shall, in the present introductory remarks, merely give my own opinions, referring those who may be anxious to obtain further information to the classic work of Astruc, and the modern treatise of Dr. Weatherhead.

A very superficial consideration of the laws which regulate the animal economy in a state of health and disease, as well as the various operations of these laws on the different structures of the human frame, is sufficient, I think, in warranting the pathologist of the present day to infer that many of the various affections, both organic and functional, now recognised as following sexual intercourse, and which I have here included under the collective term "Venereal Diseases,"* must have existed in all ages, and in every climate. In the present day we find that a large proportion of the complaints described in the first part of this work, and which we shall call *non-specific*† affections, may be developed spontaneously, and that we can produce them at will: hence I conclude that it is more than probable that they existed long before they were described, because the same agents were then in action to produce the complaints as at present. Thus I admit the spontaneous origin of non-specific diseases, and that when once developed they may be propagated by contact, under circumstances which I shall hereafter allude to.

In respect to the *second order of venereal diseases, or specific affections*,† I can only now assert (and must refer for proof to the subsequent chapters) that we have insufficient evidence to prove that syphilis, properly so called, can arise spontaneously; all the experiments made to produce it *de novo* have completely failed; and a careful investigation of the disease shows, on the contrary, that it has been contracted from a person who has himself contracted it from another individual, and it is in this way only that the disease is now propagated. I thus hesitate to admit the spontaneous origin of this form, or of *syphilis*, properly so called.

* By the term *venereal diseases*, I mean all those affections which are, more or less, directly or indirectly, the consequence of sexual intercourse. They were first so called by T. M. Bethencourt, of Rouen, in 1527.

† By the term *non-specific affections*, I mean diseases, the consequence of sexual intercourse, depending upon common causes, and not on any special one; as, for example, gonorrhœa, &c.

‡ By this term are meant those affections which depend on a special principle, distinct from all the ordinary morbid causes, such as chancre or syphilis.

INTRODUCTION.

Cases every now and then occur which have a great tendency to shake the opinions of those whose faith is not founded on a comprehensive knowledge of the nature of ulcerations of the genital organs. I will cite one instance, which might be quoted as a strong corroboration of the belief that syphilis may arise *de novo* even in this the nineteenth century. During the month of January, 1849, a little girl was brought to Queen's Ward, St. Bartholomew's hospital, under the care of Mr. Lawrence; the little patient's genital organs, buttocks, and thighs, were covered with unhealthy-looking ulcers, varying in size from a split-pea to a sixpence; in some places distinct, in others confluent. No violence had been offered the little girl, nor was there any reason to suspect that she had been infected. She was pale, haggard, and had been subject to much privation; she was then in a filthy state, the commonest attention to cleanliness not having been employed by her parents. To the unpractised eye this was a case of syphilis, originating in dirt and filth, and would to the novice in no respect differ from the disease in those unfortunate creatures who gain their livelihood in the streets; the ulcerations were as numerous, their aspect similar, and their character as defined, as in the ordinary cases of syphilis which we meet with in prostitutes. Mr. Lawrence, however, ordered the child a warm bath, applied a poultice to the affected parts, prescribed good food and quinine, and in a few days the sores became quite clean, the sloughs having disappeared; and we then remarked about twenty healthy-looking granulating sores, which no longer had the slightest analogy with syphilis, and the little girl rapidly got well: but the case bore a striking analogy with the sores of a prostitute brought into the hospital at the same time, with gonorrhœa and large ulcerations around the vagina. Cleanliness in this case was enjoined, and here likewise the ulcers, depending only on a simple affection, in a few days presented the same clean, healthy surface—showing what discharge and filth will do.

I would ask the reader to consider what might have happened if suspicion had attached itself to any man seen in company with this little girl. Syphilis, the disease might have been called, as correctly as similar affections often have been designated; and supposing mercury instead of quinine had been used, we should then have seen one of those dreadful instances which too often occur, of error of diagnosis complicated with error of treatment, instances which are often advanced to prove the origin of syphilis in the present day.

In common with many previous writers, I admit my ignorance as to when this disease, syphilis, began (for necessarily it must have had an origin). It can be traced as far back as the year 1494, and on this point there is little difference of opinion: previously to that year, authors are not agreed. For my own part, I believe that a disease* similar to syphilis was known previously to the year 1494, but the exact date of its outbreak is unknown, and that we are in ignorance of those circumstances which first gave it birth, or in what country it first made its appearance. In this respect the same lack of information reigns as in a vast number of other diseases, the origin of which we are equally unable at the present day to ascertain.

* Little doubt can exist that the leprosy so common formerly in Europe, and which has almost disappeared, consisted of what we now call secondary symptoms. I might mention many authors to support this assertion, but one perhaps will suffice. John of Gaddesden, who wrote in 1305, and who was a fellow of Merton college, Oxford, thus alludes to the possibility of contracting the disease from leprous women: "Ille qui concubuit cum muliere cum qua coivit leprosus puncturas intra carnem et corium sentit, et aliquando calcificationes in toto corpore."—*Rosa Anglica. Pavia, 1492. Cap. 61.*—In the library of the College of Surgeons.

In Henry the Eighth's time there were six leprous or lazarus-houses near London—at Knightsbridge, Hammersmith, Highgate, Kingsland, the Lock outside St. George's gate, and at Mile-End. Subsequently Lock hospitals became the receptacles for syphilitic patients.

In 1452, Ralph Holland, merchant-tailor, in a will registered in the prerogative court, bequeathed twenty shillings to the Lock lazarus-house. "Item, lego leprosis de Lokes extra Barram Sti' Georgii, 20 s."—*Weatherhead, p. 12.*

In the second part of this work I shall have occasion to refer to two or three cases tending to show that animal poisons which have been introduced into the human system, probably from the horse, have a close analogy with syphilis. Van Helmont attributed syphilis to farcy transmitted from the horse to the human being. His view of the question may not perhaps be so destitute of truth as some persons have imagined ; for, in a recent conversation with M. Ricord, I found that he had likewise met with several cases tending to the same conclusion. Whatever may be the origin of syphilis, little doubt can exist that about the years 1493 and '94, both the physicians and historians of the time described severe forms of venereal diseases, which they stated to be new and unknown, and which they admit themselves unable to cure. From this period to the present day we have progressed and receded in our knowledge of these complaints ; but it is only within a very few years that demonstrative proof, by means of inoculation, has enabled us to arrive at an exact knowledge of what is and what is not primary syphilis, and of the means of distinguishing the specific from the non-specific diseases.

If, however, we are ignorant of the origin of syphilis, neither the surgeon nor philanthropist can close his eyes to the frequency of the disease at the present day, nor to the severity which it occasionally assumes in this the nineteenth century. And this brings me to make a few observations on the present condition of the disease in the metropolis. If London hospitals preserved a list of all affections which are treated as in and out patients, it would be an easy task to tabulate them, and I should be enabled to show the exact proportion of the complaint which venereal disease produces. In the absence of any such statistics, the reader must be content with the few facts I have been at some trouble in collecting ; enough, however, to show that not even the profession itself, much less the public, is aware of the frequency of venereal diseases. Let us first look at the

ARMY RETURNS.—The army reports extend over a period of seven years and a quarter, and enter into the detail of the various venereal affections (8,072 in number) of the soldiers, amounting to the aggregate strength of 44,611, quartered in the United Kingdom.

CASES ADMITTED INTO HOSPITAL IN SEVEN YEARS AND A QUARTER IN THE UNITED KINGDOM.

Venerel affections—

Syphilis primitiva	1,415
Syphilis consecutiva	335
Ulcus penis non syphiliticum	2,144
Bubo simplex	844
Cachexia syphilitica	4
Gonorrhœa	2,449
Hernia humoralis	714
Strictura urethrae	100
Phymosis et paraphymosis	27
Total	8,072
Annual ratio per 1,000 men	181
Total aggregate strength for whole period	44,611

The numbers we have to deal with are very large ; and it may reasonably be supposed that our conclusions can not be much invalidated by any peculiar circumstances in treatment, discipline, or climate. The surgeon is at once struck with the large proportion of venereal affections occurring among our troops. On reference to the table, it will be seen that nearly one man in every five, or, more correctly, 181 per 1,000, is attacked with the complaint.

We find primary ulcers on the penis more numerous than discharges from the urethra, the numbers being 3,559 primary ulcers, 2,449 cases of gonorrhœa, or about one man in twelve suffers from ulcer on the penis, one in eighteen from gonorrhœa.

INTRODUCTION.

Venereal diseases in the English army are, then, very frequent, and the following returns show that they are much more so than in the American or Belgian army.

Colonel Tulloch has kindly furnished me with a return of venereal diseases in the American army, compiled from official returns. In the northern division, out of an aggregate of 22,246 men, 971 cases of gonorrhœa occurred, which is in the proportion of 1 in 20; and 462 of syphilis, or 1 in 48. In the southern division, out of an aggregate of 24,979 men, there occurred 929 cases of gonorrhœa, or 1 in 27; and 584 cases of syphilis, or 1 in 43.

In the Belgian army, where very strict precautions are taken to prevent venereal disease, these complaints are said to be of rare occurrence. M. Vleminckx, inspector-general of health, in the army, says, in a recent communication: "Il n'y a plus que cent trente vénériens, dans toute l'armée Belge, qui présente un effectif de vingt cinq à trente mille hommes."—*Gazette Médicale de Paris*, Janvier 3, 1846. Turn now to the

NAVY RETURNS.—The statistical reports from the navy extend over a period of seven years, and relate to an aggregate of 21,493 men employed in the "home service"—that is to say, in our ports, or about our coasts. Of this number, 2,880 labored under venereal affections, or one in every seven men in the home service is attacked with venereal diseases. In the "various" and "foreign commands," the disease is more frequent; but as we are speaking at present of the United Kingdom, it is unnecessary to dwell on the state of the complaint in other commands. It would appear, then, that venereal disease is more common among soldiers than sailors in the United Kingdom; but this may probably be accounted for, as the latter are, for the greater portion of their time, kept on board ship, and seldom allowed to come on shore; whereas soldiers, when off duty, have every facility for associating with women of the town in which they may be quartered.

Gonorrhœa and syphilis are met with in nearly equal proportions in the navy; every seventeenth man being affected with the former, and every fifteenth with the latter.

MERCHANT SERVICE.—I have been enabled to obtain a return relative to this service through the kindness of Mr. Busk, surgeon to H. M. hospital-ship *Dreadnought*, at Greenwich. The returns extend over a period of five years,* during which 13,081 patients, laboring under medical and surgical diseases, were admitted. Out of this number, the very large proportion of 3,703 came under treatment on account of venereal diseases; or, one man is affected out of every three, or, more correctly, two out of seven admitted into the hospital.

Months.	Total number admitted.	Surgical not Venereal.	Venereal.	Proportion per cent. on admission.	Average (days) stay in hospital.
January.....	1246	356	303	26·6	22·4
February	1015	302	273	28·5	21·8
March	1073	319	327	31·2	20·0
April	893	272	248	22·2	20·8
May	971	342	251	26·7	23·4
June	986	309	242	25·6	21·3
July	1082	355	306	25·6	20·7
August	1093	335	320	30·6	24·2
September	1148	334	348	28·9	23·5
October	1151	319	354	31·1	21·4
November	1188	355	369	32·4	23·4
December	1235	399	362	28·5	23·9
Annual totals.....	13081	3997	3703	28·3	22·5

Cost for five years of venereal patients, £4,165 17s. 6d.

* From 1837 to 1841.

Supposing three patients are admitted, one comes under the physician as a medical case, the second suffers from a surgical complaint, and the third labors under venereal disease. This large proportion startled me not a little at first; and, to test its accuracy by comparison with other institutions, I made an analysis of the surgical out-patients of Messrs. Lloyd and Wormald, assistant-surgeons to St. Bartholomew's hospital, amounting to 5,327 during one year: of these, 2,513, or nearly half, suffered from venereal diseases at one of our largest and most liberal London hospitals, where letters are given to applicants.

	Venereal men.	Venereal women and children.	
Mr. Lloyd	1,009	245	1,254
Mr. Wormald.....	986	273	1,259
Total.....			2,513

This table differs from that of the *Dreadnought*, inasmuch as it includes a large proportion of women and children: as nearly as possible, one in every fourth patient is a woman or a child.

As far, then, as we can ascertain from the data furnished from the reports above cited, venereal disease is very common among large bodies of otherwise healthy males, in the public service, and demands the attention of those who watch over their welfare. Scurvy, camp-fever, hospital gangrene, have nearly disappeared from the returns, but venereal diseases are still very common. The returns do not enable us to arrive at any accurate conclusion how far venereal diseases incapacitate their victims from duty. Dr. Wilson, who must be supposed to be a competent judge, inasmuch as he has compiled the returns, tells me that, on an average, each man affected with the complaint is incapacitated from doing duty for a month (?) in the army; his stay in hospital has been averaged at six weeks. In the return furnished by Mr. Busk, the average stay in hospital is stated to be twenty-two days; and during five years the expense of venereal patients has been £4,165. These facts are the only authentic ones which I have been enabled to collect on the condition of venereal diseases at the present time in England.

I doubt if venereal complaints were ever more common than at present. I very much question if, since syphilis was first treated in hospitals, the large proportion here noticed—nearly one out of two surgical out-patients, as at St. Bartholomew's hospital, one out of every three that applies to the *Dreadnought*, one out of five in the army, one out of seven in the navy—at any former period suffered from venereal disease; and yet the public, and many of the profession, believe that the disease is declining. That such is not the case, if number be any criterion, must be admitted by all who weigh well the above statistics, and compare them with the meager statements I have met with in my researches into nearly all the books that have treated of syphilis. What would the surgeon of Queen Elizabeth say now, could he rise from his grave and see the condition of the complaint, who nearly three centuries ago penned the following words:—

"If I be not deceived in mine opinion (friendly reader), I suppose the disease itselfe was never more rife in Naples, Italie, France, or Spaine, than it is this day in the realme of England. I may speake boldly because I speake truly; and yet I speake it with grieve of minde, that in the hospital of Saint Bartholomew, in London, there hath been cured of this disease, by me and three others, within five years, to the number of one thousand and more. I speake nothing of Saint Thomas hospital, and other houses about the citie, wherein an infinite multitude are daily cured. It happened very seldom in the hospital of Saint Bartholomew's whilst I stayed there; amongst every twenty so diseased that were taken into the said house, which was most commonly on the Monday, ten of them were infected with lues venerea."—A briefe and ne-

cessary Treatise touching the cure of the disease now usually called Lues Venerea, by W. Cloves, one of her Majesties Chirurgions, 1596,* p. 149.

Writers of the day, who alluded to the frequency of the disease, as I have already stated, rarely mention the proportion of cases. Grunpeck, a German physician, who wrote in 1496, however, tells us that the magnates of the land, kings, princes, bishops, and the nobles, all labored under the malady. Marco Antonio Sabellico,† a Spanish historian at the period, 1506, says that almost every twentieth person was affected. I see nothing in the numbers or persons attacked three hundred years ago which differs much from the present day; in fact, the disease, if it is not so rare among the upper classes in consequence of the less licentiousness of the age, still exists among the lower classes in a much larger proportion in our large cities than one in twenty, and I see no improvement here, or that we are much freer from the disease than our ancestors who lived three centuries ago. This is not in accordance with the account of the "oldest inhabitant," he will tell you that since he was a young man disease is less than formerly, and he finds his opinion on the not hearing of it among his friends. Doubtless this is the case, but the complaint attacks the younger generation. Were the "oldest inhabitant" the confidant of the young England school, he would find that venereal diseases are not extinct; but sad experience has caused him to shun places frequented in his youth; his passions are less impetuous, and good cheer rather than women has the first place in his affections. Statistics now rule the day, and not the impressions which a man of the world may have formed on the subject years gone by. I shall, however, doubtless be met by the reply, that if venereal disease is not as common as formerly, I must admit that its severity has decreased, until it has become so mild as to possess nothing like its former virulence.

Here, again, my interlocutor would be in error in supposing that the disease was originally a very violent affection. The perusal of ancient authors in no way induces me to believe that syphilis originally was a very virulent affection, or in any way differed from what we meet with it in the present day. Nicholas Poll, 1536, states that the natives of St. Domingo cured themselves of the disease by guaiacum in about ten days, although the Spaniards required from fifteen to sixty days; and St. Domingo is the source from which the disease is supposed to have sprung. Oviedo states the same fact. Leo Africanus tells us that he had seen many get well in Numidia without either physic or physician, merely by the salubrity of the air.‡

In reading the books published on syphilis, which describe the frightful ravages the disease is said to have committed in the latter part of the fifteenth century, we must take into consideration many circumstances. In the first place, it was supposed to be a new complaint, and as such, we are told, was abandoned by physicians, who acknowledge that they did not know how to cure it,|| and its treatment was therefore left in the hands of quacks. All authors, particularly those non-medical men (many of whom wrote on syphilis), are very apt to exaggerate a new disease, and we have every reason to believe that this was the result. The testimony of all writers on epidemics, moreover, shows that when a new form of disease invades a country, its virulence is wonderfully increased; and that, on the contrary, when the complaint has become naturalized, its effects are of a much milder character. This seems to have been the case with syphilis, which forms no exception to the general rule.

* To be seen in the library of the Med. Chir. Society.

† Vigesima fere pars hominum id malum experta. Paracelsus says it spared none, "nulli parcens," which Barrough repeats, adding, "be they kings, lords, or ladies." Again—

Car regne a ce trez cruel tourment,

Par tout le monde universallement."—*Jean de Maire*, 1525.

‡ See authors quoted by Dr. Weatherhead, page 72, et seq., in History of Venereal Diseases.

|| "Literatos ab hac curâ fugisse in hoc morbo se nihil scire confitendo."—*Jasper Torella*, 1497.

Has not this happened with smallpox in a former, and cholera in the present century? Before its coming, witness the alarm; on its first outbreak, how great was the exaggeration, how little amenable was it to treatment, and what numbers it carried off. Prevention is the weapon we now oppose to it.

If the epidemic of the fifteenth century be taken as the type, and a comparison made with the disease as we meet with it in the present day, then indeed the affection has become much milder. But this is not the proper view of the case; syphilis, which I believe existed long antecedent to that period, became aggravated by the same causes exactly which are known to increase its virulence in the year 1850. Send a body of men into a foreign country, as we did in the late Peninsula war, expose them to the vicissitudes of climate, and, after long marches and short commons, let them indulge in wine and promiscuous intercourse, remain inattentive to cleanliness, and as surely as syphilis exists, so will it become aggravated, and assume a form as virulent as it did in 1493, and we shall again hear of the Black Lion of Portugal.*

Far then from thinking that syphilis has become milder, I only believe that public health is more studied, the treatment of the complaint better understood, and patients apply earlier, but the germ of the disease lurks among us, and in as concentrated a form as ever. This supposed mildness has ever been a favorite theory with authors who have written on the complaint, even immediately after the supposed origin of the disease; and its subsidence been often prophesied; but the oracle has been false, and we are apparently as far from the fulfilment as ever. To bear out the correctness of my statement, I may quote a few authorities. So early as the year 1518, Pietro Mainardi mentions the fact of the complaint having become so mild that he predicted its total extinction. In the year following, Ulric de Hutton says it could scarcely be regarded as the same disease. (C. 1.) In 1550 the disease had become so mild that it seldom proved fatal. (*Vidus Vidius Lec. Curat. Morb. Gen.*, p. ii., sec. 2.) Sydenham says, “*Europæo nostro non perinde laetatur, sed languet indies, et mitioribus phænominis fatiscit.*” (Page 309.)

I trust, then, I have stated sufficient authority for my belief that syphilis was not originally the formidable disease some would lead us to suppose it was, but, on the contrary, that from the earliest records we possess we may rationally suppose the complaint to have been little more severe than it is in this country at present, save and except that secondary symptoms followed the primary ones in a shorter time than they do at present, and that pustular eruptions took place more frequently. These varieties probably depend upon constitutional causes, which every now and then exert a similar influence.

With every wish to be as concise as possible, I should leave this introductory chapter very imperfect did I not give a slight sketch of the theories entertained on the means of transmission of venereal diseases; for, in proportion as one or the other has been entertained, so has the disease been well or ill treated, and so has society suffered by the extension or diminution of the complaint; and we in the nineteenth century may gain much practical information by noticing the faults of our predecessors. As long as the public mind was convinced that syphilis produced its effects by breathing the same air as that breathed by the already infected, syphilitic patients were avoided by the community in the same way as those suffering from the plague, or more recently, such as labored under cholera. That this happened we may gain from many passages which are to be found in the old writers.† We may quote the instance

* A form of syphilis so called by the troops, because the virile member became inflamed a few hours after connection, and then, turning black, dropped off in the poultice, leaving a mere stump. Such cases are every now and then witnessed in our metropolitan hospitals even at the present day, and are found described in this work; but their occurrence is less frequent than formerly.

† Sævitæ hujus passionis et detestatio ejus maxima, ita ut homines à civili conversatione separentur, saltem quoad curati sint.—WIDMAN: *Tract de Pustulis, &c.*

of Grunpeck being forsaken by his friends, who we are told recognised the disease "by the change in his complexion." The lower orders were driven into the woods and fields, and left to perish without solace and assistance, even by medical men.*

This neglect of patients could only tend to increase the virulence of the complaint, the treatment of which was thus taken up by quacks and itinerant vendors of specifics. Under such circumstances the true cause of the disease or its remedies were not likely to be studied or presented. I would beg to observe that, at the period we are now speaking of, the sufferers were shunned from fear of contagion, as the disease was supposed to be occasioned by some epidemic influence in the air brought about by the conjunction of the planets; no obloquy was attached to contracting it, it was considered a misfortune; but the patients were left, as we have above seen, to take care of themselves.

Occasionally, however, this supposed means of infection was seized upon (just as magic was) to make charges against persons who were obnoxious; thus:—

One of the articles of accusation brought against Wolsey in 1539, was, "that knowing himself to have the foul contagious disease, &c., he came daily to your highness, rowning in your ear and blowing upon your most noble grace with his perilous and infectious breath."† It is curious at the present time to find these opinions long given up by scientific men, still in firm possession of the lower classes. Among them, and particularly in country places, where the complaint is known only by the name of the foul disease, the man is shunned by those aware of its existence, in the full belief that his breath is infectious; a common laborer would never dare to drink out of the same vessel after an infected person had tasted the liquor: secrecy is still, therefore, maintained among this class when affected by venereal diseases, more than among any other, and the quacks of the day, in both Paris and London, have always styled these complaints secret diseases, thus contributing to foster the idea that there was something peculiarly specific in them, and that they required specific treatment. The result has been, that patients suffering under venereal diseases, have concealed their complaints, not liking to apply for medical advice, or only do so when the disease has made great progress: this arises from mere shame, and has little to do with religious feeling.

We find, however, many authors denying the contagiousness of the complaint through the medium of the air, but little attention was paid to their observations. Public opinion, and the fact that popes, nobles, and princes, contracted the disease, rendered it much easier to give currency to the belief that the complaint was contracted through the air, than as a consequence of the licentiousness of the day. (*Weatherhead on Syphilis*, p. 61, *et seq.*)

Thus we see that medical writers of that age felt no scruples in relating their own cases, or stating those of their patients. Grunpeck was an ecclesiastic, Ulric de Hutton, a knight, and one of the most zealous champions of the Reformation.

In proportion as the venereal disease extended, owing to the causes above mentioned, the true sources, namely, contagion, became known, and we find

* "Pauperes hoc malo laborantes expellebantur ab hominum conversatione, tanquam purulentum cadaver derelicti à medicis (qui se nolabant intromittere in curam) habitabant in arvis et silvis."—LAUR. PHRISIUS: *De Morb. Gall.* c. 1.

† Oviedo says, that it was communicable by the breath: "Y participar de su aliento."—*Hyst. Gen. lib. x., c. 2, fol. 93.*

As one cause of infection. Nicolas Massa mentions, "*aëris per os inspiratus.*" Benedictus Faventius entertained the same belief; but the case which he cites in exemplification was evidently caught by kissing an infected female. To prevent catching the disease by the breath, medical men, in early times, put bread, or a sponge, soaked in vinegar, in their mouth when they spoke to their patients—a precaution we now know to be wholly unnecessary.—*Weatherhead*, p. 36.

that patients laboring under the disease were shunned, and obliged to leave large towns. In 1497, James IV. of Scotland, in consequence of the frightful prevalence of the venereal in Edinburgh, issued the celebrated proclamation banishing the infected from the city. The original is preserved in the records of the town-council, dated 22d September, 1497; and as a document, both little known and curious in itself, as characteristic of the age, I shall copy part of it. His majesty "charges straitly all manner of personis being within the freedom of this burt, quilkis are infectit, or hes been infectit, uncurit with this said contagious plague, callit the grandgor,* devoyd, red, and pass furt of this town, and compeir upon the sandis of Leith at ten hours before none; and thair sall thai have and find botis reddie in the havin ordanit to them by the officeris of this burt, reddy furneist with victuals, to have thame to the Inche,† and thair to remane quhill God provyd for thair health." Those evading this ordinance "salle be byrnt on the cheik with the marking irne, that thai may be kennit in tym to cum."

I may likewise cite in this place the more generally known "Arreste" of the parliament of Paris, in reference to the venereal, dated the 6th of March, 1496, stating that, "Because in this city of Paris many persons were sick of a certain disease called the great pocks, which had raged *for the last two years* in this kingdom, as well in Paris as in other parts of France:" and as there was reason to apprehend that it would increase as the spring advanced, it was advised to provide accordingly. In order, therefore, to put a stop to the inconveniences daily occurring from the visiting and communication taking place with the sick, it was counselled, determined, and decreed by the Reverend Father in God Monsieur the Bishop of Paris, the officers of the crown, and the mayor and sheriffs of Paris, as follows:—

1. That the public town-crier should announce, on the part of the king, to all strangers, whether men or women, having this disease, and not dwelling or resident in this city of Paris, that, within twenty-four hours of this notice, they depart the said city to the country or places of which they are natives, or to where they abode when taken with the distemper, or elsewhere they liked, on pain of being hanged: and to facilitate their departure, they are told that at the "portes," St. Denis and St. Jaques, they would find persons properly deputed to give them four Parisian sous each. They were, moreover, forbidden to re-enter the city until perfectly cured of the disease.

By the 2d article it was ordained, "That every citizen having the distemper, was to confine himself to the house, under the same penalty."

By the 8th, the mayor gave orders to the examiners and sergeants not to suffer any communication between the sick and the inhabitants, and those found disobeying this interdict were to be expelled the city or sent to jail.

And by the 9th, the city-gates were to be guarded that none might stealthily re-enter. (*Weatherhead*, p. 55.)

We are not likely again to return to this barbarous mode of treating venereal disease, which was discontinued in consequence of the plan having been found to produce the most mischievous consequences; but, in England, the fear of encouraging vice has prevented the governors of many of our large institutions and public hospitals from permitting the treatment of venereal patients in those institutions.

A few years ago, persons laboring under syphilis were not admitted in-patients to the Middlesex hospital, except by the prepayment of two pounds,

* Among the common people in France the disease was called "la gorre."

"Mais le commun quand il la rencontra,
La nommoit gorre, ou la verolle grosse,
Qui n'espargnoit ne couronne, ne crosse."

Les Trois Comptes, par Maistre Jean le Maire. 1525.

† The island of Inch Keith, in the frith of Forth, about twelve miles distant from Edinburgh.

and this by-law was printed on all the letters. The reason assigned was, that persons who contracted syphilis ought not to partake of a charity not intended for those who followed a vicious and licentious course of life. I need not say that evasions became very common, and as will be seen in the working of such absurd laws elsewhere, they were inoperative; but a curious fact was mentioned to me by the secretary of that institution during the time that the law was in operation. The guardians of workhouses used to send their very bad cases to the hospital, and pay the two pounds, and such patients rarely recovered under many months, and the governors found that the cost of these persons far exceeded the amount paid; this, together with the few persons who could afford to pay, and the protests from the surgeons who were unable to teach pupils the treatment of syphilis, and it is to be hoped more philanthropic and correct sanitary views on the part of the governors, in respect to the duties they owed to the public, have erased such laws from the statute-book, and this institution now possesses wards devoted to the gratuitous treatment of syphilis, so that the patients laboring under the disease are kept apart from the others.

It appears from the following by-law at the London hospital, "No person shall be admitted with the venereal distemper except by the special order of the house committee, subject to such regulations as they shall from time to time establish;" that syphilitic patients are not admitted into the wards of that institution, but the surgeons usually admit such cases by describing them as ulcers, diseases of the skin, &c. A gentleman connected with that institution tells me he has attempted to effect a reform, but as yet without success. We have heard that, even at the present day, a law exists to prevent the surgeons at the Bloomsbury dispensary from prescribing for a venereal case unless the patient pays a fine of five shillings. But the surgeons here evade the law, as appears from the statement of Mr. Cooper. Still the fact remains that a disinclination exists among the governors of public charities to allow syphilis to be treated. But the fines to be levied on the licentious savor much of the *good old times* when absolution could be bought, and a man might be as wicked as he liked, provided only he was rich enough to purchase forgiveness. A few years since the Lock hospital* would have ceased to exist from a want of funds, had it not been for the praiseworthy exertions of the honorable Arthur Kinnaird, Mr. B. B. Cabbell, Mr. Tattersall, and a few others. It has, however, through the exertions of those gentlemen, aided by others, now again risen to a state of great efficiency, and promises to rank with some of our most valuable institutions.[†]

This exclusion of syphilitic patients from some of our large institutions has necessarily thrown them back upon others, and hence we find by far the majority of persons treated as surgical out-patients at the free hospitals to be laboring under venereal diseases, thus these institutions fulfil the duties of the venereal hospitals of France. Far be it from me to discourage any one from subscribing to these excellent charities, but I would ask my readers to weigh well these facts, when they refuse to subscribe from conscientious motives to a Lock hospital, and give their money to others who do not perhaps profess but virtually treat cases the result of a vicious life. Society has, however, paid dearly

* The present name of our Lock hospital, which was instituted for its present purposes July 4, 1746, takes its name from *loke*, a house for lepers, but must have existed many years before as a lepers' hospital.

[†] The following curious document relating to the Lock may interest some of my readers: "As to your desire of knowing how many patients might be taken into the Lock hospital, Southwark, I here send you an exact account of those that were admitted and discharged from that house in 1720, which was the last year they were under my direction.

" Admitted from January 17 $\frac{1}{2}$ 0 inclusive to January, 1720, exclusive.....	115
" Cured and discharged.....	108
" Died	7

for the experience by which it is now becoming convinced that these regulations have completely failed in deterring men from contracting the disease, as it has invariably been found that such supposed precautions only react upon society itself. Consider the case of a prostitute, who, having contracted syphilis, is unable to pay for advice, or to lay up at her own rooms until she has recovered. Let us suppose she has been refused attendance or medicines at the institutions above alluded to; is it to be believed that she will starve rather than run the risk of infecting a drunken mechanic who has a few shillings in his pocket? What is the consequence? Her own complaint becomes aggravated; she applies to the parish, which is bound to relieve her, take her into the house, or send her to the hospital. It is society that suffers, as instead of at first receiving a little medicine, she probably must now be maintained for three months at the public expense. But the "harlot's progress" does not end here; she has infected a drunken married man; he communicates syphilis to his wife, and the mother to the child. The father is afraid to confide to his wife the nature of his complaint; the woman is ignorant of the consequences, until the disease has made considerable progress; and then we find an entire family converted into "non-effective" individuals for the space of two months. Death overtakes a large proportion of the children thus infected,* the health of the parents is permanently damaged, and he who turned the afflicted prostitute away from the hospital door, with the expression, "Get thee hence, Satan!" may perhaps, for the first time, learn that *he* himself sent abroad "the pestilence which walketh by night" to afflict the innocent mother and the child yet unborn.

Admitting (say some) that all precautions should be taken by the authorities to prevent disease in the army and navy, why attempt to legislate for the prostitute, who is sunk in the lowest depths of vice, and is irreclaimable? Is it not far better to let her run through her career for the few years she has to live, confine her to her low haunts, where she will perish through the combined effects of dissipation, syphilis, and their inevitable consequences, and thus afford an example to deter others from following in the paths of sin?

In a work of this nature, it is not for me to ask if it is a spirit of true Christian benevolence that dictates this line of argument. Fortunately for society, more philanthropic ideas are now entertained on these matters, and my opponents are sufficiently met by writers like those of the "Quarterly," cited in the motto, and by the ministers of the church, as in the dignified and conciliatory language of Mr. Garnier, at page 20. It is for me to point out the popular errors upon which these delusions are based, and show on what erroneous notions we have hitherto neglected this large portion of our population.

That prostitutes form a large class in our cities and towns, no one pretends to deny. Whether, as the bishop of Oxford says, they amount to 80,000, or whether the late magistrate Colquhoun computed them correctly at 50,000 in the metropolis, or, if Dr. Edgar accurately states that one in twelve of the sex, is a disgrace to our country, I shall not stop to inquire; one thing is certain, but a few years elapse and they disappear. It has been asserted, repeated, and believed, that they perish of want, dissipation, and disease, consequent upon their vicious mode of life, or that they commit suicide. Let my reader suppose, as has been asserted, with more or less truth, that these unfortunate creatures gain a livelihood in the streets but for three or four years on the average; and looking at the numbers daily met with, let him calculate what must be the proportion of women that resort to this mode of life. If numbers be any inducement to legislate, this class deserves the attention of the social reformer;

* It is proved by the mortality tables published under the authority of the registrar-general, that out of 244 deaths from syphilis, during the years 1846-'47, 179 were those of children under one year of age. This, and the possibility of the disease being introduced into private families by means of nurses, will be fully discussed in succeeding pages, but particularly in the chapter on "Infantile Syphilis."

INTRODUCTION.

and let it well be remembered that this state of things has existed during the period when every species of opprobrium has been thrown on prostitution, and every supposed incentive held out to lead to a virtuous life. The main point, however, remains, that in spite of everything to deter them, many of our female population have resorted, and do resort, to the streets as a means of existence. It is not for me, in this place, to more than hint that a want of paternal control, or religious education, the promiscuous herding of the sexes in the dwellings of the poor, the little value set on chastity in the lower walks of life, the lack of female occupation, the wealth which men will squander in the attainment of their sinful wishes, the facility with which illicit intercourse may be carried on in large towns, and lastly, the impossibility, real or assumed, of forcing men to settle in life in the present crowded state of society, has brought about this condition of things; nor is it possible to say whether the morals of the female population are worse or better than formerly; the fact remains, and can be testified to by all, that I have not over-colored the present condition of the case in this and other towns in England, where prostitutes form of one of the dangerous classes of society. But is it true as asserted and believed, that the prostitute dies after a few years of following her calling? In a table published elsewhere,* it is shown from the return of the registrar-general—that infallible table of the causes of death—that a very few women die of syphilis in the metropolis; only twelve females died in the course of the year 1845. I have likewise elsewhere shown, that in the Lock hospitals in London, Dublin, and Edinburgh, death from syphilis is very rare. My duties as dispensary surgeon, an office which brought me much among the poor, convinced me also that these unfortunate females did not die of other diseases more commonly than any other class of females; and inquiry among the workhouse authorities, the medical attendants of penitentiaries, asylums, and hospitals, fully corroborates the registrar-general's statistics and my own convictions.

Common sense opposed to popular opinion would bear out the above statements, and a little reflection will show the fallacy of the popular notion. It is well known that prostitutes, whatever their other characteristics, are recruited among the strongest, the healthiest, and best proportioned class of females, and they are thus naturally best fitted to resist the excesses or trials which attend their pursuit; I shall, moreover, be borne out by the concurrent testimony of all observers, that no class of females is so free from general diseases as are prostitutes. They disappear from the streets after three or four years, it is true, but not to perish by disease, nor do they commit suicide. In 1840, only 56 women above the age of twenty committed suicide in London, whereas 126 men destroyed themselves in the same year; and there is no reason to believe that even one half of these were prostitutes; the same may be said of other years.

What, then, becomes of the large number of women who resort to prostitution for a livelihood? I have every reason to believe that by far the majority soon cease to have promiscuous intercourse, and return to a more or less regular course of life. Before coming to this conclusion, I have consulted many parties likely to be acquainted with the habits of prostitutes, and have founded my belief on the following data. Whatever be the cause of a female becoming a prostitute, one thing is certain—before she has carried on the trade four years, she is thoroughly disgusted with her mode of life. It may be urged that the public deserts the prostitute, and that the prostitute does not desert the streets. Such may be; but with only sufficient exceptions to prove the rule, the case is as I have above represented it. The suffering, annoyance, and want, attendant on the vocation, have the effect of driving all from the streets except some few who seem to thrive in proportion to their age. I think it was the late

* Section on "Death from Syphilis," second part.

police magistrate, Mr. Walker, who, in one of his clever papers in the "Original," stated that he is unaware of any person in London, who, if he tries, can not get employment. I admit the difficulty of the poor man with a large family, to maintain himself and children without parish relief—the truth of the poor shirt-maker's lament, by Hood, I as readily grant—particularly when filial affection binds her to support a sick mother, or delicate sisters; but no such incumbrances attend the prostitute who flies from the horrors of the streets. We must recollect that she has a healthy frame, an excellent constitution, and is in the vigor of life, or, probably, would not be able to so abuse the gifts of nature. During the career she has run, she has obtained a knowledge of the world, perhaps beneath, more probably above, the situation in which she was born—is it surprising, then, that she settles, and is amalgamated with the poorer classes of society, or becomes a married woman, after first living in a state of concubinage with her husband? The better class of prostitutes become the wives of the mechanic, the clerk, and the petty tradesman; and as they are frequently barren, or have only a few children, there is reason to believe they live in a comparative state of affluence, unknown to many virtuous women burdened with families.

The lowest class become the frequent inmates of our prisons, living with thieves, and are ultimately transported or keep the disorderly houses known to the police.

If this be truly the end of the prostitute's career, is it, we ask, of no importance to society, that she be protected as much as possible from diseases to which she may become subject during her course of dissipation, putting out of consideration the chance of infecting others? If philanthropy will not succor her, do not the considerations of public health require us to watch over her, so that, during her short career, she may preserve her constitution as unshattered as possible, and on re-entering society, she may not bring disease with which she can taint her children?

If, then, as I have attempted to show, society has the greatest interest in succoring the infected prostitute instead of shutting her out from the benefits of our medical charities, so have the public authorities the same interest in preventing venereal diseases which are so prevalent in the army, navy, police force, and all classes of the male population of large towns. Experience teaches that every facility for cure should be afforded to men who contract venereal diseases, instead of punishing them when they have become infected. In no case has this been more forcibly shown than in the army, where the surgeons advise and enjoin their men to apply on the appearance of the earliest symptoms of infection; and weekly examination of soldiers is made to obviate the ill consequences of syphilis, and it is found to answer admirably. For if an individual in one of our public services contracts syphilis, he is examined by the surgeon of his corps, and is sent to the hospital, where he remains until cured. The worst that can happen in such a case is, that the country defrays the expense of maintaining him for a period, during which he is a "non-effective" individual. This, on board ship, is, however, of the greatest inconvenience, when the complement of men is perhaps only sufficient to navigate the vessel. Who suffers in such a case? Not the individual so much as the service. But suppose we inflict punishment by enjoining confinement, or loss of rations; the sailor will then not report himself sick, or he will attempt by every means to evade the detection of his complaint. The result is, that the disease goes on unchecked for some time; and that, ultimately, the man is laid up for a longer period, and the efficiency of the service is further impaired.

I look forward to the day, when, among other social questions, the abatement of the causes of syphilis, as well as the abatement of the causes of typhus, will

be discussed. We must no longer confine our attention to the drains and sewers ; if we wish to eradicate syphilis, we must not let it lurk in the dark corners of this metropolis. It is useless to brand it with infamy ; it will only spread the more. It must be met like other evils ; it must be investigated by scientific men ; its consequences must be pointed out, and the best means of prevention tried. It is in vain to view it with the prude's eye. Disgusting as may be its haunts, they must be exposed. Its consequences need not be exaggerated, and, if correctly stated, improvements will follow. It is the medical profession alone that can suggest these improvements. At present, much prejudice has to be got over, for all parties have aided in casting a stigma upon the disease, and upon those who have had, directly or indirectly, to do with it. The clergyman has too often drawn his picture of vice, with the sole object of intimidating others from falling into temptation. Even the medical man (who, of all others, should be the most charitable) has occasionally pointed the finger of scorn toward the *confrere* who has investigated these diseases, forgetting that John Hunter did not neglect this complaint, and that the pious Parent Duchatlet passed a great portion of his life in its meritorious investigation. If we are unable to curb the animal passions, should we not attempt to alleviate, as far as possible, the consequences which mankind suffers from their indulgence ? —particularly when society suffers more than the individual ; for by the statistics obtained from the Dreadnought hospital ship, it is found that a patient affected with syphilis becomes a "non-effected" individual during twenty-one days, and the annual cost of syphilitic patients to that institution alone is nearly one thousand pounds.

I ask those who still wish to exclude persons afflicted with venereal disease from the benefits of our public charities to weigh well the following extract from the report for 1849, of the Lock hospital, drawn up by its late excellent chaplain, the Rev. T. Garnier :—

"We would not say anything except in perfect admiration of that spirit of high-toned morality by which many in the upper circles of society in this country are so happily impregnated ; although we are aware that many excellent persons from that cause, refuse their support to the charity, fearful lest by so doing, they should give their countenance to vice, and should be virtually fostering those very penal evils, which the hospital is founded to eradicate. The governors would only request such persons calmly to examine the question in all its bearings.

"It is true that many of the objects of its merciful protection are sinners, suffering directly from the effects of their own profligate conduct. But is the mitigation of no evil or disease to be attempted except such as have been inherited, or have come upon the sufferer, while pursuing the path of propriety and virtue ? Within the limits of how small a circle would the benevolence of the Christian be then confined ? To how few cases in our general hospitals could assistance be conscientiously extended ; how many must be suffered to pine away in abject destitution. Were this a principle of conduct enjoined by Divine authority and commended by Divine example, surely the sun would not now rise upon the unjust, nor would the rain descend upon the unthankful and evil,—no scheme of redemption would ever have been formed for our fallen race,—nor would the Savior himself, our great example, have healed in his day, all manner of sickness and all manner of disease among the people, without any reference to the characters of the sufferers or the causes of their maladies."

A PRACTICAL TREATISE ON DISEASES
OF THE
URINARY AND GENERATIVE ORGANS.

PART I.
NON-SPECIFIC DISEASES.

IT has been stated in the introduction, page 7, that venereal diseases may be classed under two great divisions, SPECIFIC and NON-SPECIFIC affections. In this the first part of my work I shall treat of NON-SPECIFIC diseases, a class of affections called by M. Ricord SYPHILOID; but, as that term may by English readers be misunderstood, I shall not make use of it, but at once proceed to describe non-specific, non-virulent diseases.

DEFINITION.—By the term *non-virulent, non-specific* diseases are meant those affections which follow sexual intercourse, reproducing themselves daily, often contagious, but not depending upon a special cause—non-inoculable.

Under this general term is included *blennorrhagia*, and its consequences; *excoriations, herpes, eczema*, and every other affection the result of sexual intercourse, not included under the second order, or *specific affections*.

CHAPTER I.

BLENNORRHAGIA.

Blennorrhagia, from *Bλεννω*, mucus, and *·Πεω*, to flow, signifies a discharge from mucous membranes (consisting principally of mucus), and depending upon inflammation of those membranes, being to the urethra, vagina, or conjunctiva, what bronchitis is to the bronchi, with this difference only, that blennorrhagia most frequently depends upon, or is contracted in, sexual intercourse.

My readers must not, however, suppose that these discharges consist wholly of mucus. Modern investigation shows that pus enters largely into their composition, particularly in cases where violent inflammation is present.

I have submitted a great number of specimens of discharges of blennorrhagia in its different stages, as well as the urine of patients laboring under the disease, to my talented friend Dr. J. W. Griffith, who has kindly favored me with

BLENNORRHAGIA.

the following results, which are the more valuable as the subject has not, I think, been treated in any other work, nor has the microscope been previously brought to bear on this part of pathology :—

" The secretion of the mucous membrane affected with gonorrhœa consists of muco-pus, but it varies somewhat in character according to the period of duration of the morbid action. In the very earliest stage it consists of a simple white watery mucous fluid, but in a very short time it becomes yellow,* and this condition in an unchecked gonorrhœa lasts for some time; ultimately it loses some of the yellow tint, becoming more watery, and remains as gleet. During the very earliest period it consists of simple mucus, and under the microscope exhibits epithelial scales and their debris. During the second stage it also contains these substances, but, in addition, albumen in solution, which is coagulable by heat, the precipitate not being dissolved by acetic acid; and the microscope detects very numerous pus-corpuscles, upon the presence of which the yellow color is dependent, together with epithelial scales. In the latter and chronic stages, the number of pus-corpuscles is proportionably diminished, that of the epithelial scales increased, and the albuminous impregnation is diminished or disappears.

" The urine (excluding the gonorrhœal deposite) in gonorrhœa does not differ essentially from its normal state; it is, however, usually of lower specific gravity, and very commonly contains small crystals of oxalate of lime. The pus-corpuscles increase the density of the deposite, which subsides by repose, so that the latter appears to the eye to obtain a more copious and dense deposite than in health. The pus-corpuscles are also somewhat different in appearance from those of normal pus, being rather larger, less granular, more transparent, and less rapidly acted upon by acetic acid; in some the molecular motion is seen, in others not; the former properties depend upon the imbibition of the urine, the latter upon their being surrounded by the mucus, which defends them for a time from the action of the acid. They ultimately yield the same nuclei as normal pus. The urine in gonorrhœa also contains slightly more pavement epithelium from the bladder than the natural fluid; but I have not been able to detect the cylinder epithelium from the urethra to any amount. However, the presence of the pus-corpuscles without excess of the vesical or renal epithelium might guide in the diagnosis of the source of the pus."

SYNONYMOUS TERMS.

The disease here spoken of, under the term blennorrhagia, has been successively known by a variety of names. Among others, authors have employed the term

GONORRHœA, derived from *Torn*, semen, and *Pew*, to flow, it being supposed that the disease depended upon a discharge of semen. The impropriety of employing the term gonorrhœa as a generic term, at the present day, will at once become evident; in the first place, it is objectionable, inasmuch as the discharge which attends the affection we are describing does not contain semen, and is by no means applicable as a general one (in the manner I have proposed to employ the word blennorrhagia) to the affections of mucous membranes. Suppose, for instance, I should describe the disease commonly known as fluor albus, or the whites (a discharge coming on as the result of inflammation), as gonorrhœa of the uterus, I think I should give my readers a very erroneous idea of the complaint I may be anxious to delineate; and yet if I were to retain (as some of my former critics would desire) the term gonorrhœa, I should be

* In some cases the discharge is milky white, or nearly so, in the first two stages. In these the corpuscles are of that kind which has been denominated "mucous," exhibiting the molecular motion, &c.

obliged to so miscall the complaint. By choosing another name, I hope gradually to wean the minds of practitioners from the idea that gonorrhœa, as they call it (blennorrhagia, according to my views), is always the consequence of contagion, although they are unable to distinguish it, except by the cause. I, however, by no means wish entirely to reject the term, and shall reserve it for the well-known discharge from the male urethra, in deference to the long recognised use of the word; but in subsequent editions it may be thought advisable to change it, should the opinions of practitioners become unanimous, and popular prejudice yield to a more scientific classification. The time is not yet come when a surgeon may tell his patient that it is not gonorrhœa, but blennorrhagia, he is suffering from; however, such a term may one of these days be a popular one, for I already find practitioners who are becoming convinced that there are a great many discharges from the male urethra which are miscalled gonorrhœa, and that blennorrhagia would be a far better term.

I make these observations, because some have cavilled at the terms I employ; but I will only add, that if author and reader can agree upon the meaning of terms, the object in view will be attained.

CHAUDE PISSE is the term employed usually in France in non-medical language, derived from *chaude*, hot, and *pisser*, to urinate; but though graphically describing one of the symptoms very frequently present, still it is objectionable, as many patients, particularly females, do not complain of scalding in making water, especially when the affection is confined to the upper part of the vagina.

PUORRHœA is the name given to the disease which we are describing, by a French writer: he wishes to imply, that the affection gives rise to, or is accompanied by, a discharge of pus. Now, although it happens that pus is mixed with the discharge, still it alone does not constitute the affection, for I have already shown it to consist of muco-pus, and the quantity of the latter secretion will vary greatly. The inconvenience, therefore, of using such a term will be at once apparent.

ARSURA is another term that old writers employed to designate this disease, as they supposed it to be a species of purgation to man, and replaced menstruation in the female, which in their opinion was the outlet of bad humors.

CLAP.—This term, now commonly employed in England, is derived from the French term CLAPIER, meaning a dépôt of matter, or anything that is filthy. The impropriety of using such a term in a scientific work need not be dwelt upon.

MUCITE.—The physiological school in France applies this term to blennorrhagia, implying a simple inflammation of the mucous membrane. In the absence of the more appropriate term, blennorrhagia, the equivalent term, mucitis, might be used, but its introduction now would lead to no good end.

CATARRHAL INFLAMMATION is another term by which this disease has been known, and Capuron has spoken of it as a *venereal catarrh*, not implying, by that term, that it depends upon a principle distinct from inflammation, but wishing to use the term *venereal* as I have done in speaking of venereal affections, viz., that the disease is a consequence of sexual intercourse. And really the term is not a bad one; it may be introduced with advantage in speaking of affections of the bladder. A multiplicity of terms is however so objectionable, that I shall not further dwell on this one, but only add that most authors would clearly understand any one describing a disease under the term catarrhal inflammation of the uterus, urethra, &c.

CATARRHAL PRIMARY SYPHILIS.—In the valuable work on the venereal disease, by the late Mr. Wallace, I find blennorrhagia described under this term. Notwithstanding such an authority, I think no word could be more improper, as it brings us back to that period when gonorrhœa and syphilis were supposed to arise from one and the same virus.

BRENNING is the last term of which I shall speak ; and it is here mentioned, more to complete the history of the synonymous terms, than with the intention of recommending it as a general one, to describe the disease in question, arising as it does from so many causes.

After a careful consideration of the terms which are and have been in use, I think the word blennorrhagia presents the fewest objections, although, like the others, it may be cavilled at. In the following pages, then, it will be employed, and although derived from *Blēnia*, mucus, and *Pēo*, to flow, still it is not intended to express that the discharge, which is a consequence of the disease, consists only of mucus ; it is rather a muco-purulent secretion, as any one may readily satisfy himself. In making use of this term, let not the reader consider that the disease depends upon anything specific, or different from common inflammation ; for, after a close study of uncomplicated cases we can find no reason for agreeing with those authors, who seemed disposed to admit a blennorrhagic virus, or, in other words, to distinguish *gonorrhœa* from *leucorrhœa*. Blennorrhagia is then defined to be inflammation of the mucous membrane, attended with more or less discharge, and a consequence more or less direct of sexual intercourse, not necessarily, although often, contagious ; this last character depending upon the morbid secretion, which, acting on another mucous membrane, will occasion a blennorrhagia, but will (on inoculation) produce no disease of the cellular tissue into which it is introduced. In fine, blennorrhagia differs in no respect from other inflammations of mucous membranes, otherwise than in its usual situation, and in the manner in which it is contracted. Blennorrhagia thus considered may occur in nearly all the mucous membranes. In the male, the urethra or prepuce may become diseased ; in the female, the vagina, uterus, &c. ; and in both sexes the conjunctiva and rectum. The affection, as far as my personal observation has gone, does not attack either the buccal or nasal mucous membrane.

The epithelium alone may be the seat of the affection, or the substance of the mucous membrane may participate in it ; lastly, the follicles may become affected, or the sub-mucous cellular tissue be simultaneously or consecutively attacked.

CAUSES OF BLENNORRHAGIA.

The causes of blennorrhagia, considered in reference to mucous membranes generally, may be divided into two classes, the predisposing and exciting.

PREDISPOSING CAUSES.—Under the head of predisposing causes,

AGE may be cited as an important feature. Infants are found to be more predisposed to the affection than adults, *ceteris paribus* ; and this predisposition seems to depend upon the irritable state of their mucous membranes. Every one acquainted with the diseases of newborn children, must be aware that they are particularly liable to blennorrhagic affections of the eyes, glans, prepuce, and vagina, from causes that would fail to give rise to the complaint in adults.

SEX has likewise its influence as a predisposing cause ; it is an indisputable fact, that the female is more liable to discharges of a blennorrhagic character than the male. But they are comparatively rarely affected with discharges contracted in promiscuous intercourse ; it is very difficult for a woman to contract gonorrhœa from a man laboring under the disease, in consequence of the mucous membrane of the vagina being constantly covered with secretion, which protects the mucous membrane beneath. On the contrary, the male most frequently contracts the disease in connection with a female laboring under the complaint. The disease rarely originates in the male, frequently in the female.

The TEMPERAMENT plays its part, likewise, as a predisposing cause. Every individual who is subject to congestion, or an œdematos state of the mucous

membranes, is predisposed to blennorrhagia; hence the lymphatic temperament is a strong predisposing cause. We meet with blennorrhagia much more frequently in the fair-haired woman than in the brunette. But we observe a particular type of irritable, dark, clear complexioned men, in whom the disease is much more difficult of cure than in the fair-haired, as will be noticed hereafter. It is difficult to say if one attack of blennorrhagia predisposes to a second; but when an individual has been once subject to the complaint, connection with a female laboring under slight symptoms of leucorrhœa will often reproduce the disease, and yet the symptoms in the female may be so slight that they will fail in inducing disease in other men who are not thus susceptible, and who have not been subject to blennorrhagia. Numerous instances will be given in the course of the work, and which are daily met with in practice, proving this susceptibility. The subject is further treated of under the head of Contagion, at page 29.

CLIMATE and LOCALITY are two other very potent causes in inducing blennorrhagic affections, combined as they often are, with or inducing the lymphatic temperament. If statistics could be collected on such a subject, I feel confident that discharges from mucous membranes would be found much more common in England than in France, or in more southern climates. The frequency and obstinacy of discharges from the male in this country are proverbial. This is very apparent in the statistics mentioned at page 9 of the Introduction, where I showed that one in eighteen men was afflicted with gonorrhœa in the British army. We are not at present in possession of data showing what proportion of men are attacked with gonorrhœa in the French army.

In low situations and in damp weather the disease is most rife and more difficult of cure. The same remedies which succeed in dry weather, will often fail in the damp moist months of the year. The season of the year is not without its influence. In spring and autumn, discharges from mucous membranes are more common than in summer or winter.

HYGIENE is daily found to predispose, more or less, to the same effect. Under this general term mention should be made of the influence of *clothing*. Light and imperfect clothing may be considered as one of those causes which predispose females in the higher ranks of life to discharges of a blennorrhagic nature. Women will too often sacrifice comfort to appearance; hence the *mignon* shoe and the open-worked stocking are worn, in spite of the cold feet they produce: a chilliness of the extremities follows the insufficient quantity of woollen under-garments, and gives rise to what are called white discharges. The peasant-girl, who protects herself from the cold by woollen petticoats and worsted stockings is not subject to leucorrhœa, and we may draw the practical lesson of strongly recommending warm clothing in cases of blennorrhagic affections. My friend Dr. Tilt has, in his recent talented work on diseases of menstruation, called the attention of the profession to the subject of drawers in the following terms, which I thoroughly approve of:—

“The protection of the feet from damp is of course a point of great importance; but what is of still more consequence, in a fitful climate, is effectually to protect the pelvic organs by drawers, so that the patients may be somewhat independent of our piercing easterly wind, of our cold, clammy atmosphere, and of all those sudden transitions of our own or of nature’s making. If we dwell so much on a point which may seem of little importance, it is because we are firmly convinced, that by the use of means so simple the number and intensity of diseases of menstruation may be greatly diminished. Many of our countrywomen fancy that they would surrender a portion of their eminently feminine character by adding to their apparel an appendage considered masculine in this country—a prejudice that is naturally confirmed in them by the well-known proverbial expression, “she wears the breeches,” by which discredit is sometimes thrown on both contracting powers of a matrimonial alliance.”

ance. The physician should use his best endeavors to combat this unfortunate prejudice, and we trust his efforts in this respect will be more successful than they have been in the professional crusade against tight-lacing." (Page 133.)

EXCITING CAUSES.

Food of a stimulating, heating nature, as well as salt provisions, are so many exciting causes; beer, of all beverages, has been more especially accused of this effect, but on insufficient grounds; it is, however, certain, that of all beverages it is the one which will the soonest bring back a discharge when taken during convalescence. In Germany, the students who drink beer, though of a weak kind, to great excess, know this so well, that they avoid it most particularly when laboring under blennorrhagia, and I have had occasion to see cases where the discharge has been recalled by even one glass of that liquid. They consider their red wine as of the greatest benefit, and find that a bottle of their strongest Rudesheimer does not so much harm as one glass of beer. In this respect, however, some little explanation may be necessary. In recent discharges, both beer, wine, and coffee, must be particularly avoided, as we shall hereafter explain; it is impossible to cure the complaint as long as the patient indulge in such beverages; but in old standing cases, particularly in leucorrhœa in women, red wine may be taken with advantage, and in some few cases beer is not attended with any increase of discharge, although it can not be said to be likely to remove it.

Among other articles of food, asparagus has a tendency to produce blennorrhagia; hence its use should always be forbidden to patients liable to the affection in question. There are, in fact, certain persons who can not eat that vegetable without having a urethral discharge on the following morning.

The use of cantharides is often followed by the same effect.

It has been stated that horse-exercise will produce, in the female, this affection. Frequent and long-continued sexual indulgence, or too severe continence, are likewise said to act as exciting causes; and so I believe they may, when predisposition exists.

While, on the one hand, M. Jourdan thinks that onanism is one of the most common causes, M. Ricord entertains a different opinion. Far from supposing that masturbation is always succeeded by blennorrhagia, I imagine it to be a strongly exciting cause. The following case shows that there exists some reason for this opinion. During the period I performed the duties of Externe, under Professor Velpeau, at La Charité, a mother brought into the hospital a little girl of three years of age, affected with a white swelling and a discharge from the vagina. She stated that the infant was in the constant habit *de s'amuser*, as she called it, and when left alone, repeated continually this malpractice. She further traced the habit, so early commenced, to a plan which nurses in France have of tickling the genital organs of children who are peevish; this for the moment quiets them, but infants repeat these manipulations even at a very early age, as this case proves. On inquiry, I found that this was not an isolated case, and leads in after-life to most vicious propensities.

LOCAL IRRITATION, or mechanical causes,* such as bougies, pessaries, calculi, or any substance that individuals introduce into the vagina, rectum, or urethra, will act as causes of the disease. M. Ricord used to relate the case of a woman who was brought into the wards of Dupuytren, complaining of great pain and discharge in the vagina: on examination by the *toucher*, that eminent surgeon was not a little astonished at finding his finger opposed on all

* Hunter says, p. 469, Palmer's edition: "For instance, every symptom of the venereal disease in form of a gonorrhœa may be produced by any other visible irritating cause, and often without any cause that can be assigned; even buboes and swelled testicles, which are symptoms of this disease, have followed both stimulating injections and bougies when applied to the urethra of a sound person."

sides by a wall of porcelain, when, after sundry efforts, a large jam-pot was pulled out, which this female had introduced so far that she herself was incapable of withdrawing it.

ENEMETA have been accused of causing blennorrhagia, probably on insufficient evidence, but their employment may recall a discharge when it is getting well.

INJECTIONS.—It may seem paradoxical to state that injections will produce blennorrhagia, and that the means which, as we shall presently see, are undoubtedly the most efficient in curing the complaint should occasionally produce the disease in peculiar constitutions. The first case which satisfactorily proved the point, occurred to a gentleman who consulted me on the morning following sexual intercourse. He stated that, immediately after coition, fear of consequences induced him to procure an injection of two grains of sulphate of zinc to the ounce of water, and he injected one syringe full into the urethra: he was surprised at this being followed by slight pain, with scalding; and in great alarm he came to me on the following morning, with a yellow discharge, pain and heat in making water, confined to the fossa navicularis. I was at first inclined to treat the case as one of clap, but remembering that on a previous occasion he had been unable to bear weak injections, and that little sloughs had been formed about the glans penis by the employment of a very weak solution of zinc, I hesitated not in believing that the injection had caused the discharge. The result proved the correctness of my opinion. I persuaded him to remain quiet till the following day; he did so, and no appearance of discharge remained. This fact is further corroborated by observing that in some persons the best treatment of gonorrhœa is to leave off all injections, as the too long continuance of these usually useful remedies produces or keeps up the discharge, as will be stated hereafter.

Let those who have any doubt on this statement consult the work of Swediaur, page 32, vol. i. That author states that he injected a solution of ammonia into his own urethra, and a most violent inflammation, with purulent discharge from the whole canal, which it required six weeks to cure, came on, and fully convinced him that injections of an irritating nature will produce the most violent forms of blennorrhagia.

There are certain pathological or morbid states of the constitution which occasion the disease in question. Thus scrofula, gout, cancerous affections, various skin diseases, secondary symptoms, particularly the *mucous tubercle*, have undoubtedly this effect.* I have now under my care a medical man who has psoriasis of the corners of the mouth and tongue, with a similar condition of the urethra, as far as it can be seen, attended with discharge, which the ordinary remedies have failed in curing. His family are all subject to psoriasis.

LABOR and ABORTION may be considered as very frequent causes of blennorrhagia; the lochia, instead of disappearing after the usual time, become irritating, and give rise to chronic discharges. But one of the most frequent causes of the complaint in women is undoubtedly abortion. If you interrogate those suffering from discharges, it will be found that they date, truly enough, the commencement of their ailments from the time of their first miscarriage. It is

* A good illustration of this happened in one of the patients at the venereal hospital during the winter of 1840. A man came in suffering under various secondary symptoms, particularly the mucous tubercle (*condyloma*) around the anus. He drew my attention to a discharge which proceeded from the umbilicus: on examination, a mucous tubercle was distinctly recognised in this position, and M. Ricord took the opportunity of showing it to his class; no doubt many of my countrymen will remember well the case. Now here is the secretion from the tubercle giving rise to a blennorrhagic discharge. Had such a case occurred in the vagina, most persons would have considered that the gonorrhœal or leucorrhœal discharge, as it would there be called, gave rise to secondary symptoms: whereas the converse is true. Moreover, as mercury is of the greatest advantage in curing secondary symptoms, and was here employed with advantage, so would such treatment be cited as a further proof that gonorrhœa and syphilis are one and the same affection.

at this period that the disease which continues year after year commences, and which is intractable to every drug in the pharmacopœia, and is unchecked by all sorts of lotions, causing the poor patient to drag on a miserable existence, and giving to the hitherto pretty woman that characteristic appearance which may be called uterine.

INATTENTION TO CLEANLINESS.—There is no one cause, perhaps, among those I have previously mentioned, which gives rise to blennorrhagia so frequently as inattention to cleanliness. Women, more especially, are liable to much blame on this score: they wash every other part of the body, but, unhappily for their own comfort, as well as that of society, they seem to be averse to let clean water reach the vagina.

I have been accused of traducing, in a former edition, the character of my countrywomen. Considerable experience in private practice has, however, shown that such has not been the case; and it is incredible how inattentive women, even those living in the greatest splendor, are to the necessary ablution of these parts. I have been told that my observations apply only to prostitutes and that class of women. Surgeons, however, who are consulted on uterine affections and on venereal diseases, have reason to know that the women of the town are particularly careful, and employ plenty of water; and it would be the height of prudery for a surgeon, whose object it is to enlighten his professional brethren on uterine disease, to conceal, from motives of false delicacy, facts which are too apparent, and which can be verified by those who have the means or opportunities of doing so. But if instrumental examinations are never made, how can any one assert that I am wrong in my conclusions? I might here mention many cases: one will suffice. An old patient of mine married, and shortly before his wife's confinement came to me with gonorrhœa preputialis. He assured me that since his marriage he had led a most exemplary life. On examination of the lady (and she moved in the highest circles), I found an acrid discharge—more than enough to account for her husband's condition, and which was completely removed by tepid water, which she had been afraid of using. Surely, accoucheurs would do well to give their patients a few hints on the necessity of ablution, even up to the period of their confinement, which might be done without in any respect wounding their feelings.

MENSTRUATION has its influence in producing the affection in question. Of this fact no people were more aware than the Jews. We find it strictly forbidden in the Mosaic law to have connection with a woman about this period, and the command no doubt arose out of the fact that such intercourse was found to produce blennorrhagic affections. In the present day, this cause is frequently urged as the one which has produced the complaint, and, I have little doubt, with considerable truth; but instrumental examination too often proves that there is another and a more potent cause, namely, ulceration of the neck of the uterus, which, under circumstances to be mentioned hereafter, produces too often discharges in the male.

WORMS.—Intestinal worms exert an influence in producing the disease. They are supposed to act by occasioning a sympathetic action between the rectum and vagina—irritation in the one organ is felt generally in the other; or, again, by the passage of the worms from the anus to the vulva. M. Ricord states that he has seen a case where he could distinctly trace the blennorrhagia to this cause. I have met with several cases of blennorrhagia in children, which show the importance of medical men being acquainted with this fact. The following may prove interesting: A woman brought a female-child to the hospital, which she had left very much to itself, as she was obliged to go out to work during the day; and observing a discharge on its linen, questioned it, and said that she believed a boy had given the disease to her daughter. On further interrogation, this was by no means evident; the mother had asked the child if she did not play with such a boy, and the child replying in the affirma-

tive, she concluded the boy had ravished her daughter. A dose of scammony brought away a great quantity of worms, and the child got perfectly well. Renal and vesical affections, as well as haemorrhoids, will act in the same way in producing discharge from the male and female organs of generation.

Having now passed in review those agents which can be rationally considered as predisposing and exciting causes of blennorrhagia, I may observe that, thus considered, the complaint presents nothing that can be called specific; it may arise under the most varied circumstances and causes; its existence in the male or female, therefore, is of itself no proof of *libertinism*; it may occur in the most modest female, as well as in the youngest child. In medical jurisprudence, the necessity of being guarded in our opinion need scarcely be dwelt on, and the surgeon, in family disputes on the subject of contagion, should be especially cautious, and always lean to the weak side.

As the knowledge of cases that have actually happened may put surgeons on their guard, and enable them to avoid similar errors of judgment, I will relate the following, told me by an eminent practitioner in London: A lady's maid consulted him for some complaint, and after a few days referred it to the lower part of the abdomen. He persuaded her to allow an examination, when (according to his statement) the hymen was found entire. There was, however, considerable discharge per vaginum, with pain in making water, and purulent secretion from the urethra. He told her he suspected the disease being venereal; she denied it, went back and related what had passed to her mistress, whose husband came to my friend; spoke of the young woman's good previous character; asked if he believed that the complaint was venereal—if so, threatened to turn her off; and thus placed the surgeon in no very enviable position. The result was, that my friend explained to the master the difficulty of diagnosis; the servant kept her place, and the surgeon acknowledges having lost the confidence of the family, who believe him ignorant of this part of his profession. I have never been placed in a similar position, but if I were, much as I should wish to screen the female, I should certainly let her know that the surgeon has a character to save as well as she has, and quickly remind her that her *breach of confidence* has obliged the surgeon to take measures to support his opinion. However, I think a little tact may always prevent these unpleasant occurrences. Another case, illustrative of the power a medical man possesses of amicably arranging family feuds, is shown in the following instance, and is the type of others that are daily occurring.

A very respectable-looking female applied to me for a discharge of twenty months' standing, which she asserted her husband had given her. Instrumental examination detected a large ulceration of the neck of the uterus. The patient stated that twenty months before she had miscarried, and the discharge had been increasing ever since; and as she had observed stains on her husband's linen, she was sure he had gone astray, and that she had contracted the foul disease from him. He denied the accusation, and accused her of infidelity, and they led a most unhappy life. In about three weeks after, this female was cured, the husband soon got well, and they are now perfectly satisfied that the affection in the one was the consequence of the miscarriage, and the clap in the other a consequence of the previous affection in the female.

The reader who has attentively perused the foregoing pages must feel convinced that blennorrhagia does not necessarily depend upon a specific virus, but is, as I have stated in the commencement of this chapter, a non-virulent, not specific disease. This, however, brings me to consider one of the most important points connected with the subject, namely—

CONTAGION OF BLENNORRHAGIA.

In speaking of the causes of blennorrhagic discharges from the male and female organs of generation, I have avoided as much as possible considering

them as contagious, preferring, in the first place, to describe the predisposing and exciting causes, and only incidentally alluding to the possibility of the complaint being communicated by contagion; yet this is considered the most usual means of contracting the disease. That blennorrhagia discharges are peculiarly liable to be thus disseminated, no reasonable doubt can be entertained; but I think the preceding observations will show that there are a multiplicity of causes independently of contagion which will produce the affection; and it is therefore to the consideration of the means, and effects of contagion, that I shall now particularly call the reader's attention. When in the following pages the word is employed, let it be understood to mean that if the muco-purulent secretion produced by any of the foregoing causes of blennorrhagia comes in contact with another portion of previously healthy mucous membrane, either in the same individual or in another, it will, in many cases, but not necessarily in all, produce a similar affection; not, however, by virtue of anything specific in the muco-pus. Its action will be like that of any simple chemical irritant.

The experiments made with secretion resulting from inflammatory affections of mucous membrane are few; science, however, possesses a small number of well-recorded facts. Dr. Vetch, at page 242 of his treatise on diseases of the eye, gives an instance of having taken the matter from the eye of one man laboring under Egyptian ophthalmia and applied it to the urethra of another patient: the purulent inflammation commenced in thirty-six hours afterward, and the case assumed a most violent form of gonorrhœa, attended with more tumefaction of the glans penis than usually occurs in that disease. Dr. Vetch states that the experiment failed when applied to the urethra of the same individual from whose eyes the matter had been taken, though it was tried in several instances: hence we learn that it is not always enough to bring the secretion in contact with a healthy mucous membrane, in order to produce the blennorrhagia affection; and we infer there may be various circumstances which must be combined to produce the disease, although we can not always seize upon them. We can not expect that every individual running the risk of contagion will be affected, any more than when exposed to a draught of air he should be seized with coryza, although his neighbor on the right and left may be attacked by it.

In some cases we arrive at, or suppose we know, the cause of this circumstance. We may say that habit, or as the French call it, *acclimattement*, may account for the impunity with which some individuals expose themselves, and yet escape the disease. The following case will illustrate my position; I borrow it from a collection of memoirs published by M. Ricord. A companion to an elderly lady was in the habit of receiving a lover who was a very old friend; and during a long intimacy contracted no disease, although this lady, his mistress, latterly suffered under a discharge. It happened that a second lover presented himself, who was previously perfectly free from disease: no sooner, however, had this young man enjoyed her favors, than he found himself attacked with a discharge, although the original lover, notwithstanding frequent intercourse, contracted no disease. The second lover recovered from his complaint, and although he visited this lady afterward, he did not become infected. But a third Lothario was, like his predecessor, subject to the same penalty for her first favor, and was in his turn rendered exempt from a second attack. On examining the female, M. Ricord noticed a catarrh of the uterus, which was more or less purulent, and a granular appearance on the surface of the neck of the uterus was very apparent, somewhat similar to that delineated in plate No. I., Fig. 2. Now in this case it appears that habit prevented the original lover from contracting a blennorrhagia, although exposed in the same manner as the other two, who in their turn became insensible to a second infection. In this respect habit may have its influence, as in cases of certain fevers which

are said not to attack the natives, but only strangers, who become, after a time, unsusceptible, although exposed to the same influences.

Although contagion is one of the most frequent causes of blennorrhagia, surgeons must not be too credulous, otherwise they will be liable to be often deceived. Women will frequently hatch up a story as to the manner in which they have contracted a discharge. It is not uncommon for nurses, for example, to account for a discharge which they may be subject to, by saying they have contracted it from the child they have taken in to nurse, wishing to make you believe that it is through the milk they themselves have become affected. If, on examining such children, no disease of the mouth or genital organs can be found, the surgeon may flatly contradict them, as such a means of contagion is impossible.

In private practice the subject of contagion comes before the surgeon in a thousand ways, and the manner in which he decides the question must depend upon the knowledge he has previously acquired of this very difficult and puzzling complaint—which, without the employment of the speculum, it is impossible thoroughly to investigate.

A gentleman consults you about a discharge having many or all the characters of gonorrhœa: he has not been subject to any of the exciting or predisposing causes above cited; has cohabited with one female, of whose fidelity he has not the least suspicion; no doubt can, however, exist, that he is laboring under a discharge, putting on many of the characters of clap, pain in making water, chordee, profuse discharge, and its attending symptoms. In different cases (for in London their name is legion) the symptoms may be more or less severe, varying from the slightest gleet up to those of an acute clap, but this makes little difference in the diagnosis; the main question is, “How did your patient contract the complaint, of the existence of which there can be no doubt?” Now it is the solution of this question, which private practice, and a tolerably considerable share of it, can alone throw light on.

Before pretending to give an opinion, I have generally desired my patient to let me see the female from whom he has contracted the complaint, and in the majority of cases she is particularly anxious to submit to an examination, and protests in the most energetic terms her innocence, and denies the possibility of having contracted the complaint from any third person; often she goes further, denies ever having had, or having at the moment of examination, any discharge of any kind: some put in a sort of proviso, *more than they have seen for years past.*

My answer to all such protestations is, that I should not think of questioning their fidelity; that is a matter to be settled at home. My opinion has been asked on what can have caused disease in my patient, who is laboring under discharge, and has never exposed himself elsewhere, and that it is simply my duty to examine them and report on the state of their health.

The number of examinations I have thus made are very numerous, and I almost always find a constant train of symptoms. The female is a delicate, fair, pale creature, who has been suffering in her general health for years, liable to indigestion, nervousness, and its attendant evils; complaining of pain in the back, shooting down the front of the thighs; able to undergo little exertion, and in consequence leading a most indolent life; accustomed to confined bowels, irregular menstruation, amounting sometimes to amenorrhœa, in other instances attended with the most profuse haemorrhage; complaining of more or less pain in sexual intercourse, and admitting or denying the existence of *whites* or *weakness*, as females call it, in the short intervals between menstruation.

Instrumental examination detects a lax pale vagina, with more or less profuse glairy discharge, frequently with simple ulceration of the anterior or posterior lip of the uterus, the opening of which may be completely locked up with the

glairey white of egg discharge; entangled in this may be noticed globules of pus, and the secretion from the vagina may be more or less purulent, but on pressing the urethra no pus passes out. In some cases the uterus may be enlarged, in others displaced, from the laxity of the parts, the examination is attended with very little pain, and in cases in which the patient suffers it appears to depend upon nervousness more than upon any other cause.

Now, what answer can you give your patient, and what does all you have seen teach you?

An examination thus made enables you to tell your patient that the female from whom he has contracted the disease has been long laboring under the disease called "Whites;" that it is this complaint which has produced the discharge in him, and your examination has given you no reason to believe that she has been unfaithful; in fact, as a general rule, the sexual desire in such females has been reduced to the lowest ebb, and infidelity is not one of their sins; but by degrees they have got into such a state that local treatment will alone cure the complaint, and treatment of indigestion will avail nothing.

Your patient (and perhaps my reader) will ask, "But why did not this occur in the commencement of the acquaintance? six weeks or more of cohabitation has passed, and it is only within a few days that I have had this disease, although I have exposed myself during the whole time." And he will reply, "You are attempting to screen this woman, who must have been guilty."

In the commencement of my private practice I had great difficulty in answering these pertinent questions; but, subsequently, I found the explanation easy enough; as long as these secretions from the female are destitute of pus, and the uterus and vagina are in that chronic state, giving rise to white discharges, as happens when connection is not frequently indulged in, contamination will not probably occur; but if inordinate sexual intercourse, from strong constitutional power of the male, follows, inflammation is set up in the organs of the female, and, the secretion becoming purulent, contagion results; particularly, if the man indulges freely in malt liquors, or has been taking violent exercise. Whatever be the true explanation, however, I am practically convinced of the fact, that contagion will occur a few weeks after constant cohabitation with females in the condition above described, although a man may escape at first.

Now, if discharges can occur in males who have cohabited with females, can we be surprised if prostitutes communicate the disease to men, and yet on examination are not found to be suffering themselves from aught else than the whites?

My readers may recollect the murder of a woman some years ago in a low brothel in St. Giles by a man of the name of Connor, who committed the crime to avenge himself on his paramour, from whom he had contracted gonorrhœa. Through the kindness of Dr. Reid and Mr. Fitzgerald, I was enabled to examine the organs of generation of the murdered woman. The vagina presented nothing unusual; no marks of syphilis could be detected; the os-uteri presented a long chink-like aperture, and was completely blocked up by a gelatinous transparent discharge, which I brought home between two pieces of glass to examine under the microscope. Beneath the mucous membrane of the os uteri the vessels were somewhat turgid. The fallopian tubes were diseased, and the ovaries enlarged, but were not examined, as they were kept for other purposes. Under the microscope, the secretion was found to be free from spermatozoa, and consisted principally of *mucous corpuscles*; and like those found about the os-uteri, were of that fibrous appearance so frequently detected in mucus. There was a large proportion of epithelial scales found in the secretion of the vagina.

I mention the case here, to prove that the subject of contagion may become an important item in medical jurisprudence, although it has not yet met with that attention it deserves.

The following letter from Dr. Gregory puts forward so appositely some questions in reference to what is called contagion, that I am tempted to insert it, with my replies, in the belief that my opinions on this subject will thus be most clearly elucidated.

" 6 CAMDEN SQUARE, Nov. 26, 1849.

" MY DEAR SIR : Will you favor me with a reply to the following queries ?

" A man, having taken small-pox, can not take it again the next week, or the next month.

A man in Essex, just recovered from an *ague*, does not take another for a long time, though living in the fens.

A man, who has just recovered from a fit of the gout, is *safe* for six months at least, though he drinks his port as freely as ever.

A man contracts a gonorrhœa ; gets thoroughly cured, no stricture or any other trouble remaining. In short, he is quite *well*, and no mistake.

" *Queries.*—

" 1. How soon afterward can he contract ANOTHER gonorrhœa, if he exposes himself to it ? Can a soldier contract two, three, four, five gonorrhœas in one year, if he be fool enough to expose himself to the '*temptation*' ?

" 2. Does the mucous membrane of the urethra acquire any temporary indifference to the gonorrhœal poison by once suffering the contact of it ? And if there be any such *temporary* unsusceptibility or indifference, for how long a time does it last ?

" If you will kindly tell me the law in regard to '*urethral susceptibility*,' prior to my lecture to-morrow afternoon, on exanthematous susceptibility, '*Eris mibi Magnus Apollo.*'

" Yours, very truly,

" G. GREGORY.

" To W. ACTON, Esq."

Answer to query 1.—A man may contract, and often does suffer from a second gonorrhœa immediately after his recovery from the first. The same irritating secretion may not produce it, but let him have connection with another female laboring under a leucorrhœal or purulent discharge from the vagina, and he may become diseased.

Answer to query 2.—The mucous membrane of the urethra does not, in my opinion, acquire any, even temporary indifference to gonorrhœal *secretion* by once suffering the contact of it. You will observe that I say secretion, not poison, for I have no evidence of the existence of any specific quality in the secretion to which the term poison can be applied. Ammonia, I stated, at p. 27, was injected into the urethra by Swediaur, and the result was gonorrhœa. The ammonia was a chemical irritant, not a poison.

The case is different with regard to constitutional syphilis. Insusceptibility to secondary syphilitic affection does exist, and is a curious fact, not generally known or admitted. If a man contracts chancre, followed by secondary symptoms, and is effectually cured, he may, *generally*, consider himself exempt from the possibility of a second constitutional affection, although he may contract primary symptoms again and again. Such a law as this, however, will not prevent a series of *relapses* of secondary symptoms during many successive years, when the syphilitic diathesis is established.

Before quitting the subject of contagion, I should say a few words on certificates, a subject which annoys very frequently a medical man. In consequence of judicial inquiries, or family feuds, a female presents herself and asks the surgeon for a certificate to the effect that she is not subject to a contagious

discharge, or is not in a condition to communicate any discharge, under which she herself is laboring, to another person.

After a careful examination, one to the following effect may be given:—

I certify, &c., that ——— presents no symptoms of a *syphilitic* disease, but suffers from a catarrh of the vagina, uterus, &c., and may probably (or not, as may be), communicate the disease to another.

No surgeon can be warranted in stating more.

EPIDEMICS.—Blennorrhagia, in the preceding paragraph, has been considered as a sporadic disease, but it is represented by some authors as occurring epidemically. One of these so-called epidemics, says M. Ricord, has fallen under my notice, “during the time the Madeleine was being built: there reigned an epidemic among the masons; this occurred to so great an extent, that when a mason presented himself as an out-patient, I immediately told him he worked at that building, and came to consult me for a clap, and the poor fellow thought me a prophet, so sure was I to be right in my statement. This supposed epidemic simply depended on the collection of a great number of workmen together, who lived in common with a few women suffering under blennorrhagia.” Such is the explanation of these so-called epidemics, and the word can not be more unfitly used as applied to such cases.

PERIOD OF APPEARANCE.—It will not, perhaps, be out of place here to say a few words on the period that elapses between exposure to the causes, and the occurrence of the blennorrhagic disease. The period varies from twenty-four hours to some few days, and may depend upon the greater or less re-action which takes place, as well as other circumstances, for a certain space of time always passes between the last connection and the appearance of the disease.

In estimating the probable period of the occurrence of the discharge, after connexion, various circumstances must be borne in mind, as formerly alluded to at page 27, where it occurred on the next morning; here, however, it was clearly traced to the injection, which produced a discharge within twelve hours after connection, and the female might have been accused or suspected without the slightest cause.

Some authors have observed cases which occur so long after connection, that they have been induced to believe in what is called *incubation*. Among others, Bell cites a case to prove this point. A person went on board a ship, where he could have no means of contracting gonorrhœa (adds Bell), and on the fiftieth day after being at sea, a discharge from the urethra appeared and continued some time. This has been cited as a case of gonorrhœa which was contracted on shore, and broke out at the end of fifty days: the intervening time being considered as the period of incubation.

Now, giving Bell all the credit for veracity, it does not seem necessary that we should come to his conclusion. Might not the man have contracted the discharge by certain mal-practices? but even this was not necessary. It has been above stated that various causes will produce the disease, as well as contagion, particularly scorbutive complaints. Is it not more rational, then, to suppose that these very rare and exceptional cases depend on some predisposing or exciting cause above alluded to, rather than believe that incubation exists, or that gonorrhœa may be concealed in the system, to break out when it pleases its good will and pleasure?

I believe, in fine, that blennorrhagic affections are produced soon after the causes which excite them come into action, although circumstances may retard their appearance two or three days: in this respect they resemble other diseases.

THE SYMPTOMS OF BLENNORRHAGIA.

A blennorrhagic affection may be ushered in by loss of appetite and the other signs of an inflammatory disease, constituting THE GENERAL SYMPTOMS ; these are, however, often absent.

The LOCAL SYMPTOMS consist in heat, a tension of the part, followed by augmentation of the healthy secretion, or the natural secretion, instead of increasing, may diminish or altogether cease, giving rise to that form which has been vulgarly called dry clap. The affection does not, however, remain long in this state, for the secretion again becomes not only increased but altered, taking on a muco-purulent character, and the pus will preponderate in proportion to the severity of the inflammation of the cellular tissue. (See page 22.) The discharge changes in color ; at first it is milky, then more or less gray or green, or, in proportion as blood is mixed with it, it will have various brown or dark shades ; to these circumstances the patient will pay great attention. The odor as well as the thickness of the discharge will vary much and present the characters alluded to at page 22.

The COURSE of the affection will be either acute or chronic ; however, the symptoms have usually a tendency to progress until the twelfth or twentieth day ; from that period it as gradually decreases in severity ; from being purulent, the discharge assumes a muco-purulent or simple mucous character ; and lastly, only an augmented but natural secretion remains.

The TERMINATIONS of the affection may be various ; soon after its invasion, the blennorrhagia may terminate suddenly, either under the influence of treatment, or without any reason that we can assign : such may be called *delitescencœ*. It has been supposed that the disease, after existing a certain length of time, may be cured locally and suddenly, but at the risk of being driven into the system and breaking out afresh in some other part ; in other words, that a metastasis of blennorrhagia may take place, analogous to that which occurs in rheumatism. And this brings me to consider an important question, namely,

METASTASIS.—Patients will tell you that, on the last occasion, Mr. So-and-so *would* not cure the clap speedily, for fear of driving it into the system, and having been recommended to you, they hope you will not effect a rapid cure at the expense of their general health. In the present day, these prejudices have still to be counteracted ; not that I believe the profession at large entertain them, but as they lurk in old-fashioned corners, and every now and then appear, a few words must be said on the subject.

I fear in many instances these ideas must be traced to the inability practitioners experience in curing rapidly discharges from the male and female organs of generation. I have heard of surgeons who find it advisable to propagate these opinions, which are thought to point out the danger of applying to modern practitioners, and cause certain old-womanish treatment to be voted safe, and reconcile the patient to submit to a nine months' treatment of drugs and lotions, and, as I said before, are constantly used to veil ignorance. There are others, however, who appear conscientiously convinced of the truth of these dogmas, and would not, if they could, cure their patients. Whether the doctor or the patient is most to be pitied, it is difficult to say, but my own experience may be of use to the one and the other, and may, I hope, be the means of completely routing out this old-fashioned doctrine.

In the first place, it is untrue to assert that a discharge rapidly cured will be followed by any general disease. The modern practice of rapidly curing gonorrhœa sets this question entirely at rest. As to the cases of rheumatism (and I shall have much to say hereafter on this subject), I may assert that in nine cases out of ten, the rheumatic affection will not be caused by repressing a clap, inasmuch as it is generally found impossible to cure the dis-

charge (when once freely established) in cases where rheumatism co-exists I have at the present moment under my care, a gentleman, who no sooner contracts a discharge, than he immediately applies to me in order that I may instantly check it by the most active remedies; experience has taught him that unless the discharge from the urethra is instantly cured, the complaint will inevitably be followed by rheumatism of a most severe form. In the commencement of my London practice, I entirely disagreed with these practical views of patients, but more extended experience has made me reflect upon these obscure cases, and I am obliged to confess that in many constitutions the only way to avoid rheumatism coming on, is to rapidly cure the discharge, the portal apparently through which rheumatism enters the constitution. I will detail a case which has been seen by many besides myself in London, and, unfortunately, without affording him any relief, until after months of treatment.

A gentleman, still under twenty-six, was subject as a boy to rheumatic gout (so he says); a few years ago he contracted his first clap, which was attended with a most severe form of rheumatism, in spite of all that London surgeons and physicians could do for him; and a residence on the continent was the only means by which a cure was effected. Having been such a martyr to the complaint, and resolved not to run the chances of infection again from promiscuous intercourse, he married; some few months after his nuptials I treated him for a severe attack of rheumatism which followed the influenza; he recovered rapidly from these complaints, and remained perfectly well; his wife, however, began to complain of leucorrhœa, and my patient came again under my care with the slightest possible discharge. Knowing all the circumstances of the case, I advised some simple astringent wash and aperient medicine; instead of abating, the discharge increased, and was followed, in spite of all advice, and the best concerted measures, by rheumatic ophthalmia, inflammation of the bladder, general rheumatism; and the disease, in a subacute form, was no sooner cured in one set of muscles than it broke out in another. Perhaps it may be said, that I drove the disease into the system; unfortunately for such doctrines, I was for some months unable to master the discharge, it went on uncontrolled by all our remedies, a stumbling-block to the best medical and surgical opinions in London.

If there be an axiom then in surgery, let me advise the young practitioner to consider, whether it be not to attempt to cure gonorrhœa rapidly in a patient who has been liable to rheumatism, and not be deterred by the fear of driving the disease into the system; it will rush in fast enough.

The observations which I have made on rheumatism, apply with equal force to other complaints. M. Ricord states, that after a careful consideration of cases, where the affection is supposed to be driven into the system, and cases of this kind have been observed in his hospital from time to time, he is by no means convinced that a blennorrhagic affection is cured in one part of the body, merely to break out in another. From what he has observed as happening occasionally, he is induced to believe that some other affection may come on during, or coincide with, a blennorrhagia; which disease, acting on revulsive principles (as a blister or seton would), may moderate or cure the blennorrhagia. For instance, should a patient, during a gonorrhœa, be seized with any other affection, say fever, that may have the effect of producing such a revulsive action, that the discharge will for the time abate. I have seen this happen pretty often; but such is not the opinion usually entertained. Persons believe, for example, that a gonorrhœa quickly suppressed by treatment will give rise to ophthalmia or swelled testicle.

These erroneous opinions deserve a few minutes' consideration. In the first place, I deny that gonorrhœa speedily cured will produce an affection of the testis; in my own practice I have never seen it happen, except under circum-

stances which will be mentioned hereafter, when the treatment of that disease comes under our consideration. Far, however, from believing that we may cure the disease too rapidly, I think, on the contrary, that we can not cure it quickly enough ; and, unless we take active steps, the patient will be a sufferer for many months ; and even in the worst cases, it is better to run the slight risk of producing swelled testicle, than allow gonorrhœa to run on unchecked, for as long as the discharge exists swelled testis may come on. I will cite a case illustrative of my meaning and treatment. A gentleman was under the care of a city surgeon for gonorrhœa during four months ; swelled testis came on, although no injection was used, and the latter affection gradually disappeared, but the discharge remained as bad as ever ; and, the patient getting tired of the lingering treatment, applied to me. I candidly told him that in his case there must be a great predisposition to affection of the testis, and I was fearful that if I employed my usual course of treatment, I might (although not necessarily) produce a repetition of the affection of the testis ; I should, however, certainly cure the gonorrhœa. Having pointed out the risk (which, as I explained to him, I am always ready to incur, provided a patient has never had swelled testis), and stated my opinion, that without the employment of injections, I could not guaranty a cure, my patient readily submitted. For the first few days, all went on well ; the chord then began to be painful, and an affection of the testis gradually came on. The usual treatment speedily however cured the affection of the testis, and convinced of the correctness of my opinions, no sooner had the inflammation abated in the organ, than I commenced astringent injections with the usual precautions of strapping the testis, and my patient in three weeks, notwithstanding all the unfavorable circumstances above detailed, perfectly recovered. Let those who please call this rash treatment ; the young surgeon, it is true, will find no notice of such cases in books ; authors are silent on the subject, old-fashioned practitioners will reject it, and when I commenced practice I should not have dared to employ it, but gradually I have found it is the only sound common sense view of the case, and the successful treatment of a large number of such instances, enables me with confidence to recommend it, for, in the majority of patients, swelled testicle will not arise, although they may have suffered from a previous attack of the complaint ; and I cite the case as one which presents the complication that often puzzles the London surgeon ; and, although the treatment may not at present be readily sanctioned, it will doubtless, one of these days, be generally employed.

RESOLUTION.—The most ordinary termination of blennorrhagia, is by resolution ; that is to say, a gradual diminution in the symptoms and secretion takes place.

Such has been always considered the most favorable termination ; I shall again allude to the subject under the head of treatment ; but from the observations just made, it will be seen that I do not think gonorrhœa should be allowed to go on unchecked, I consider a cure by delitescence far preferable.

CONTINUATION UNDER THE CHRONIC FORM.—Surgeons have usually stated that the affection may terminate *in a chronic form, gleet*. Such language is, however, not correct, as their so-called termination is undoubtedly but a *continuation* of the disease under another designation. M. Ricord observes, he was consulted by a military man for a gleet which he had been subject to for thirty years. Could it then be said that the blennorrhagia terminated thirty years ago, as he had suffered ever since that period ? The acute stage of the disease may then terminate or pass into a chronic one, which depends on various alterations of the tissues, which will be described under the term

PATHOLOGY.

The lesions of the mucous membranes resulting from blennorrhagia are numerous, yet very few specimens of the pathological changes are preserved in

even our best museums. Works on the venereal disease are equally deficient in information on these points. In books on this subject one writer has copied another, and seems to have dissected rather books than bodies; since the time of Morgagni, we have added few new pathological illustrations on the disease, and we seldom see the urethra opened in post-mortem examinations. For these reasons I shall describe the subject in the following pages at some length. Hunter states it as his opinion, founded on the examination of the urethra of two men who were hung while suffering under gonorrhœa, that this disease is attended with no changes of the mucous membrane; other writers, in copying him, have been contented with this view; although they forget that a mucous membrane, wherever it is placed, is subject to certain diseases in common. Why should the urethra, then, be more exempt from changes of structure than other similar membranes?

Sir A. Cooper says in his lectures, fifth edition, page 499:—

“ Many years ago I had an opportunity of examining the urethra of a man who was executed, and who had gonorrhœa at the time of his execution. The inflammation had extended down to the bulb of the urethra, for an inch to an inch and a half down; the urethra was exceedingly red, and there was some effusion of matter on the internal surface; the urethra was red at the bulb, but not of so deep a color. The inflammation is therefore not confined to an inch or an inch and a half down the urethra, but often extends over the bulb of the urethra, and in this way often produces stricture. In the case to which I allude, the gonorrhœal inflammation had extended at least seven inches down the urethra. In general, on examination of a subject who has died under gonorrhœa, you will find a small quantity of purulent matter at the extremity of the penis, and inflammation extending about an inch and a half down the urethra, which, if exposed to the air for twenty-four hours, assumes a blood redness.”

At page 32 will be found the *post-mortem* appearances of the genital organs of a woman murdered by her paramour, for having given him the clap. The appearance there given show that no great change had taken place in the mucous membrane. Recent observations of the genito-urinary mucous surfaces during life, as well as after death, have clearly proved, that both acute and chronic inflammation will produce such alterations in mucous membranes as are not generally studied, much less known. By means of the speculum, the state of the female organs in cases of blennorrhagia of these parts, has been sufficiently demonstrated; and from the analogy of the tissues it may rationally be supposed that the same morbid appearances would be found in the male could we observe his urethra. Gonorrhœa, however, seldom terminates fatally in the vagina, &c.

In acute stages of blennorrhagia the mucous membrane is simply redder than usual in its whole extent, exactly resembling what takes place in *balanitis*, or what is commonly called *gonorrhœa préputialis*. In some cases this redness, accompanied by a good deal of local swelling, puts on an erysipelatous character, which has induced Fabre to term it *gonorrhée seche*, as it gives rise to very little discharge.

In other instances there exist distinct patches of reddened cuticle or epithelium, surrounded by a healthy appearance of the mucous membrane; these patches are covered with little pieces of detached and softened cuticle, or spots. All species of discharges may accompany these morbid states, and require to be removed with lint before these appearances are distinctly brought into view.

In some places there may be erosion of the epithelium, and distinct granulations may be seen emerging from the body of the mucous membrane. Ulcerations of all characters may be met with in any point of the internal organs, as most Englishmen who have attended the Parisian hospitals have had ample

means of observing. When the disease is in a chronic state, I have often observed the mucous membrane paler than usual, but presenting at certain points a tumescent appearance, and stripped of epithelium, or covered by pale granulations similar to those observed in cases of chronic inflammation of the conjunctiva. In this condition the surface is very liable to bleed under slight causes. In some cases I have witnessed distinct vegetations in the whole course of the vagina, as well as at the orifice of the urethra.

M. Ricord states he has, in two cases (examined after death), found distinct ulcerations with an indurated base situated on the mucous membrane, an inch and a half within the carunculae myrtiformes. A woodcut, showing ulcerations of the urethra in the male, will be given in the Second Part of this work under the chapter "Chancere of the Urethra." In neither of these cases was there any analogy to cancer or scirrhouss disease.

In addition to the changes* above mentioned, distinct induration, or cicatrices, and other morbid appearances, may occur; but any further description must be reserved for what we shall have to say on stricture.

RELAPSES.

To credit some surgeons, relapses appear almost the rule, and the cure forms the exception. But within the last few years, as the knowledge of these complaints has become more general, and our treatment more scientific, the difficulties of curing discharges have somewhat abated, and relapses are more uncommon; still, those who meet with much consultation practice are fully conversant with the thousand-and-one causes leading to a relapse; in the preceding pages many such have been pointed out, and others still remain to be noticed. A relapse often occurs from the omission of some one particular direction, although all others may have been prescribed. Too frequently a relapse depends upon the indiscretion of a patient, particularly in diet. Indulgence in fermented liquors, taking warm baths too soon, omitting treatment, violent exercise, saline medicines, sexual excitement during the day, or lascivious dreams at night, readily explain the return.

In other cases a relapse may be traced to the same cause which originally produced it, reacting on a very susceptible mucous membrane, as when a patient is cured, and again cohabits with the same female who gave him the discharge, and who has not undergone treatment; this is a very fruitful source of relapse, and one that is not always recognised, and brings the treatment of the surgeon into great disrepute.

In not a few cases the fault rests with the surgeon, who forgets to impress on his patient the necessity of omitting from his diet-table certain articles of food or drink, and in not prescribing proper remedies. Relapses may generally be traced to some one or other of these causes, namely, omission or commission; still they are becoming less and less common in practice.

We occasionally meet with a few instances which admit of none of these explanations. Patients deny having exposed themselves. They have implicitly obeyed all your injunctions; and yet, after remaining well some few days, a relapse occurs: and this sometimes occurs in a patient who on former occasions you have readily and permanently cured. Persons in large practice undoubtedly meet with a few of these instances; but it is not by ringing the changes on the various remedies, that the scientific surgeon will hope to cure

* The cases to which I have referred, place these lesions now beyond a doubt, and the many opportunities of demonstrating their existence in England, prove that they occur among all nations as well as in all climates; the experience of others has now corroborated my statements that these affections are exactly the same in this country, and are quite as common as in Paris, although they were not previously recognised in London.

such instances : it is in studying the habits of the patient, and recommending change of air, that he will ultimately cure these rebellious cases.

Blennorrhagia may not only return, but recur at regular intervals. I have seen a few cases of this kind, which I may call *periodical*, as they were accompanied with intermittent fever, and seemed to depend upon irritation about the neck of the bladder. Certain other causes also may influence the return of blennorrhagia : thus certain patients have an annual gonorrhœa, occurring every winter. In such instances drinking and dancing may reproduce the discharge, if there be any predisposition.

These periodical attacks of blennorrhagia, again, depend upon causes which we are not able always to ascertain, independently of sexual indulgence. "I have," says M. Ricord, "seen more than one person attacked with gonorrhœa annually, in consequence of eating asparagus ; and, on leaving off this vegetable, the discharge has ceased."

COMPLICATIONS.

In the preceding pages, blennorrhagia has been described as it *may* occur ; but in a variety of instances it is not such a simple disease : numerous accidents arise during its course, and will be here described under the head of complications. The local swelling may be so great, that the urine will be prevented from passing along the canal, giving rise to retention depending upon an inflammatory stricture. The lymphatic vessels may become likewise inflamed, and buboes or swelling of the lymphatic glands result, similar to what occurs after irritation in any part of the foot. These buboes may be the result of a direct extension of the inflammation along the lymphatic vessels to the glands, or may depend upon sympathy, or that law of the animal economy which causes the one extremity of a canal or tube, when irritated, to swell or sympathize with the other extremity, without the intervening part of the tube or canal being sensibly affected : these last are properly called sympathetic buboes.

Abscesses not unfrequently attend the acuter forms of blennorrhagia. We meet with these especially in young females, situated in the vulva ; in the male they occur about the frænum, and give rise to fistula, if not properly treated.

I have seen hæmorrhage occur during the course of a blennorrhagia, which, like other hæmorrhages from mucous membranes, may depend upon simple exudation from the surface, or upon the rupture of vessels around ulcerations, or from their varicose condition.

Fresh exposure to contagion, as well as any excess in diet, by exaggerating the severity of a previously-existing blennorrhagia, will act as a severe complication, by increasing the morbid condition of the mucous membrane.

Chancre is a frequent complication ; it keeps up the irritation, and gives rise to a secretion, which, from its position, we can not always remove as soon as it is formed.

Constitutional syphilis has been above stated to be a frequent cause ; it may likewise be a complication, as will appear in subsequent chapters.

I shall hereafter describe one of the most frequent complications, namely, epididymitis, or what is usually termed swelled testicle ; but the complaint can not find a place here, as we are describing only the general features of the affection, without reference to locality.

Notice has previously been taken of rheumatism occurring during the course of a blennorrhagia. Authors generally are not agreed upon the relation between these two affections : I therefore speak of it here as a complication—observing that rheumatism may come on during the time a patient is suffering under blennorrhagia, and must refer my reader to the special chapter on this subject.

THE DIAGNOSIS OF BLENNORRHAGIA.

From what has been above stated, it might appear that the diagnosis of blennorrhagia is easy, characterized as the disease is by a muco-purulent discharge. There are, however, several points which are deserving of attention, as distinguishing the position, intensity, &c., of the affection.

The character of the discharge will often give the surgeon some notion of the exact situation of the disease. When he observes a glairy secretion, resembling the white of egg, oozing from the vagina, he is justified in stating that the neck of the uterus is affected; when the discharge is composed of muco-pus, he may be assured that it arises from the urethra, vulva, or vagina, &c. Some assistance may be derived likewise from chemical tests, to decide whence the secretion issues, as it is found that the muco-pus of the vagina is acid, whereas that coming from other sources is alkaline.

If the mucous membrane be alone inflamed, the secretion is formed almost solely of mucus; when, however, the sub-mucous tissue becomes implicated, we observe the secretion assuming a more or less purulent character in proportion as this tissue is affected.

The existence of blood, mixed with muco-pus, will generally lead the surgeon to expect ulceration of the canal which he can not examine; but this may become a source of error, as blood may be poured out in consequence of excessive inflammation. Usually, however, I have been able to distinguish, or at least to suspect, the existence of a chancre, from the appearance of the discharge, especially when it has a grayish or reddish tint, and is of a thin consistence; and inoculation has frequently proved these surmises to be correct. I shall not here stop to point out the error of those who consider that because blood is mixed with the blennorrhagic secretion, the disease was contracted from a woman during her menstrual period.

Lallemand, of Montpellier, has, in his work, entitled "*Les Pertes Seminales*," laid great stress on the existence of semen in these discharges of a chronic character. A careful examination, however, should be made before it is asserted that the spermatic fluid is present, as what is often called semen is nothing more than simple mucus, which can not be mistaken for the former, containing no animalcules when viewed under the microscope.* When semen is present in the discharge, we may usually affirm that blennorrhagia has reached the openings of the vesiculae seminales, and, by the irritation it produces, gives rise to the ejaculation of semen, which becomes mixed with the secretion. The acute may be distinguished from the chronic complaint in the urethra, by the former being accompanied with pain in making water, and the secretion being purulent; whereas the latter is accompanied by no scalding in making water, and the secretion is mucous. It will hereafter be found that the existence of the one or the other stage occasions a great difference in the treatment.

A very important point of diagnosis may be drawn from the existence of the complication of chancre, as it enables the surgeon to decide whether a blennorrhagia is of a virulent or a mild character. This point has been much contested; and although the expressions "virulent" and "mild" are often met with, yet no two medical men are agreed upon the use of these terms. I shall, before explaining my own opinion upon this point, say a few words on the various suppositions which have lately been brought forward.

Supposing that a male or female is laboring under blennorrhagia, the question to be decided is, whether it be a virulent or a mild affection. Some surgeons state that, before coming to an opinion, we must wait for the occurrence of secondary symptoms: if they appear, it is a sufficient reason to call the blennor-

* For other particulars relative to seminal discharges, see chapter on Spermatorrhœa.

rhagia which has preceded, a virulent complaint. This opinion is just; but we would ask, of what use is a diagnostic sign which can only be given at so late a period, and when we have arrived at the diagnosis it is of no further use to us, as probably the blennorrhagia is cured?

Other authors have considered the existence of buboes as the distinguishing character of the two forms of the disease; but, as will hereafter be shown, no dependence can be placed upon this sign, for any simple irritation on the foot, &c., will give rise to buboes; therefore the mere circumstance of buboes, without reference to the pus they secrete, demonstrates nothing.

Some, again, state that a violent blennorrhagia follows connection with a suspicious subject; whereas a mild affection may follow connection with a modest woman. These distinctions, founded on the consideration of the causes, can not be adopted. Is the opinion on a subject like this to be based on the supposed or presumed morality of one woman over the other? Does not daily experience show that girls of the most tender age, as well as persons holding high social positions, can and do contract virulent complaints, and may communicate these to persons who have connection with them? Let not the fact of a disease being contracted from a more or less (apparently) virtuous woman be the means of founding a diagnosis.

Little dependence can likewise be placed on the opinion of those who state that the green color, as well as the presence of blood in the discharge, or the breaking out of the disease a long time after connection, can enable us to distinguish a virulent from a mild blennorrhagia.

Not long since, at the Academy of Medicine, it was stated that the duration of the disease may serve as a distinguishing feature of the two forms; a virulent complaint was stated as likely to last forty days, and a mild one twenty: this, however, is a very erroneous opinion, as will presently be shown.*

The acute nature of the complaint, and the existence of ulceration, has been also cited as proving the existence of a virulent affection: this will likewise be shown to be incorrect.

Induration of the canal, pain on pressure at a particular point, and the possibility of taking the impression of an ulceration with the *porte empreint*, or bougie armed with wax, have been cited as so many pathognomonic signs of the virulent form. It will hereafter be found, however, that these form but a probable diagnosis, as induration is by no means a constant character of a virulent complaint, and any simple ulceration will give rise to pain, and an impression on the instrument may be occasioned by folds of the mucous membrane.

I believe that authors have had ample reason for separating blennorrhagia and its discharges into two forms, which they have called virulent and mild; but I have before stated that, previous to M. Ricord's investigations, they had completely failed to state on what circumstances they depended, nor could they by any one symptom distinguish one from the other. As this is of great importance, I may be excused if I dwell somewhat longer on it, particularly as the practical application of facts which I shall hereafter mention depends upon the clear comprehension of this part of my subject.

The previous views of authors show how much difference of opinion existed on this subject when M. Ricord undertook to show that the cause of a virulent blennorrhagia depended upon the complaint being complicated with a *chancr*.

* M. Puch, one of the surgeons of the Venereal hospital, has stated to me that he can distinguish a mild from a virulent blennorrhagia by the period which elapses between the appearance of the discharge and the previous connection. The observation of a great number of cases of a mild blennorrhagia proves that the usual period is from a few hours to as many days; on the contrary, in a virulent affection the interval between connection and the first appearance of the discharge is from seven to fifteen days. That this is often the case no one will doubt; but, if alone relied on, it may lead to many errors in practice.

In women, more especially, he found that what was called a violent gonorrhœa depended upon the existence of ulcerations, which could not be discovered by an examination of the external organs of generation, but which the use of the speculum clearly proved to exist ; but " Did all ulcerations give rise to a virulent gonorrhœa ? " was the next question to be solved. At the time this eminent surgeon was investigating this subject, he often had occasion to treat the woman from whom some of his male patients had contracted the disease, and he found that there were various forms of ulcerations in the female agreeing in certain physical characters, and yet the secretion on their surface would sometimes cause a mild gonorrhœa ; sometime chancre on the glans penis and prepuce ; on other occasions, violent gonorrhœas, in the male. In vain did he try to distinguish these ulcerations by their physical characters. It was only by inoculation that he was enabled to prove why sores similar in appearance gave rise to such different consequences. Inoculation soon showed him that there may exist an ulceration of a *specific* character, which will be described in its proper place, and called chancre ; but there may likewise exist ulcerations of a *simple nature*, the result of an inflammatory state of the mucous membrane, which were frequently the consequence of a blennorrhagia. From this moment that which was previously doubtful became clear, and an inquiring and observing mind like his was not long in deciphering what had been the *opprobrium medicorum*. He came to the conclusion that appearances similar to those the speculum had proved to exist in the vagina might exist in the urethra of the male, but which, from its small size, it was impossible to demonstrate. However, one opportunity of examining the urethra, followed soon after by a second, put him in possession of two cases, which he showed to the Academy of Medicine, in which chancres existed in the whole course of the urethra. (See wood-cut, Part II.) He thus discovered the key to this hitherto difficult labyrinth, and concluded that the only diagnosis between virulent and mild blennorrhagia is derived from inoculation. M. Ricord further proved by experiments, frequently repeated, of inoculating with the secretion of a simple mild blennorrhagia, that it will produce only a slight irritation, which subsides in a few hours ; whereas, if the complaint be virulent, or, in other words, depends upon or is complicated with a chancre which is concealed, or which can be brought into view by the speculum, the secretion introduced under the skin, in a similar way as in the former experiment, will produce a vesicle, pustule, and chancre. This, then, I call the *certain pathognomonic* diagnosis of a virulent blennorrhagia. A rational diagnosis may be drawn from the rosy, thin, serous, or rusty color of the discharge, provided such be present, as well as from an indurated spot in any point of the canal, accompanied with fixed pain, &c.

Should buboes follow, which on inoculation give rise to the characteristic pustule, it may be asserted confidently that the blennorrhagia is a virulent one. The occurrence of secondary symptoms, which only follow in a few cases, gives a further diagnosis of the same fact.

The surgeon must, however, usually depend upon the rational diagnosis, as inoculation can not always be proposed, or he may find patients object to submit to it ; he must, however, remember that it is but a rational one, and on such data be cautious how he risks his reputation by giving an opinion.

THE PROGNOSIS OF BLENNORRHAGIA.

The prognosis, with reference to the probable duration of the disease, will depend in a great measure on the mucous membrane, which is the seat of the complaint. It is proved, by experience, that when the conjunctiva or urethra is affected, a cure will not so readily ensue as when the prepuce or glans penis is attacked. When the uterine surface suffers, the surgeon may feel assured

that the complaint will resist treatment longer than when the vulva or vagina is implicated.

The same principle holds good in relation to the portion of the canal affected. It will be found that the disease will be more difficult to cure in proportion as it has gained the deeper portions, or such as are the farthest removed from the meatus; hence it is, that blennorrhagia of the neck of the uterus or the prostatic portion of the urethra are the affections most intractable to remedies.

If the blennorrhagia has existed but a short time, the cure will probably be rapid. Chronic cases are more likely to resist our plans of treatment. An acute attack of the disease will be cured more speedily than the chronic form.

The prognosis formed by the surgeon will be much modified by the circumstance whether the patient has or has not been previously attacked with blennorrhagia. If he has previously suffered from a blennorrhagic affection, the present complaint will be probably less severe, but more rebellious to our means of treatment.

It is evident that the occurrence of the various complications will modify considerably the prognosis. On this point I shall not insist, reminding my reader only that improper food or treatment are very liable to produce them, especially the formation of abscesses along or around the parts affected.

Under the head of prognosis, it may be as well to consider a few of the questions which patients put to surgeons, as it will enable me to state some important facts, and attempt to remove some popular prejudices.

A patient will sometimes ask the surgeon if the treatment he is about to prescribe will give rise to a stricture or a swelled testicle. It is a very common prejudice to suppose that treatment will occasion one or both these complaints; and this, like many other popular errors, has taken its source in medical writings, where we find it stated that a blennorrhagia speedily cured will give rise to various other affections. I have already (p. 35) at some length combated these notions, and I can but repeat that no ill consequences are to be feared from any treatment, provided it is not grossly improper. If I were disposed to be aphoristic, I might say that the ill consequences will be few in proportion as the cure is speedy; and I defy any one to produce a case cured in twenty-four hours from its commencement, which has been followed by any ill consequences. There are prejudices against speedily curing a blennorrhagia, and I may be told by some surgeons, "after a practice of full thirty years, I am of an opposite opinion." But, I ask, may not such a practitioner have labored under a mistake during thirty years? Is implicit belief in a fact, for that space of time, a proof that that fact is true? Has not an old author said, and very truly, "*experiencia fallax?*"

In addition to the question relative to prognosis which the surgeon will be called upon to answer, he may have to reply to the following: "Shall I, or shall I not, be subject to secondary symptoms?" To answer this question, a surgeon must of course ascertain if the blennorrhagia be virulent or not; that is to say, if it be accompanied with chancre within the urethra or vagina. If it is a mild, uncomplicated affection, he may, with every assurance, quiet the fears of his patient.

If there be reason to suspect that the patient is suffering under a virulent form of the complaint, it does not then, even, necessarily follow that secondary symptoms will ensue; for, if the chancre can be cured previously to the third day of its existence, no such symptoms ever will appear; and if it be unattended with induration, secondary symptoms will not probably arise. If, however, indurated chancre exist, too great caution can not be used: tell your patient that the complaint is very serious; otherwise he may lay to the score of your treatment effects which really depend upon the presence of the chancre, or his own neglect.

Under the head of prognosis, I must consider the greater or less probability of transmitting a blennorrhagia. On this score patients are usually very inquisitive, and surgeons should be particularly guarded in any opinion they may give. Whately asserted, that as long as a discharge was merely white, there was no fear of communicating it. Bell states, that if the secretion consists of mucus, we need entertain no fear on this head. Patients, however, ask, but will not always follow advice.

A gentleman had been ineffectually treated for gonorrhœa and gleet for the last year; the discharge had been reduced to one drop only, to be seen every morning. He was unable any longer to put off his nuptials, and, with the sanction of the authorities in Manchester, he married, and consulted me on his way to Paris six days after the ceremony. He showed me the lint, with a drop of creamy discharge, which had appeared since morning. He had no reason to think that marriage had increased the discharge. He had taken no medicine for some time, but came to me for an opinion as to what he was to do. By the advice of his surgeon, he had always made water before intercourse with his wife. This plan I recommended him to continue for some time, and to consult Ricord if anything occurred. I never saw this gentleman again, but I mention the case to show the position the surgeon may be placed in.

M. Ricord considers that when the secretion is reduced to a thready mucus, which is transparent like vermicelli, contagion is not to be dreaded. On the contrary, as long as the secretion is purulent—a fact to be ascertained by simple inspection, or by means of the microscope, whatever may have been the duration of the disease—it is capable of causing a similar complaint in any mucus membrane with which it comes in contact.

The surgeon would do well to prohibit sexual intercourse in all such instances; it is the safest plan, but in private practice the advice will not be always attended to, and yet ill consequences do not often follow. It is surprising with what impunity a man may cohabit with a female at the time he is suffering from more or less purulent discharge, without her contracting the disease. This arises, as I have before stated, from the vagina being copiously supplied with a mucous secretion, so that foreign matter does not come directly in contact with the mucous membrane. Of all the patients who in great alarm have consulted me, and acknowledged, in a moment of intoxication (while suffering from a serous discharge), to have had connection, I can scarcely recollect one who has communicated the disease to the female; but, although she has escaped, the man usually suffers by an accession of symptoms, the discharge in his urethra becomes purulent, and the surgeon very often has to recommence the treatment. In the interest, then, of the patient, cohabitation must be generally prevented.

The prognosis relative to the female suffering from a blennorrhagic discharge is very different from that of the male. As long as she has any appearance of discharge, connection should be strictly prohibited. The male urethra is not protected by any such coating of mucus, and we can never affirm that a man will not contract the disease from a serous discharge a female may be subject to.

TREATMENT OF BLENNORRHAGIA.

In studying the history of blennorrhagia, it is curious to see how its treatment has differed at various periods, and become modified by the opinions which medical men of the day entertained on its nature and causes. When it was a prevalent idea that blennorrhagia depended upon, or consisted in, a loss of semen, such remedies were prescribed as surgeons supposed capable of checking *spermatorrhea*.

At a later period, when humorism was in vogue, the discharge was supposed to consist of pus; and as it was thought advisable to chase the bad humors from the body, care was taken not to check the discharge—the supposed outlet of various disorders. When we consider that medicine was but little advanced at this period, we are not surprised at this doctrine having kept its ground for a long time; but is it not astonishing that similar prejudices are still entertained by many enlightened men, although they reject the ancient doctrines of humoral pathology? It is lamentable to find that many of the practitioners of the nineteenth century are not more advanced than were those of the fifteenth, and obstinately resist any line of treatment which has for its object the cutting short a disease, for fear of consequences which they can not describe. "My treatment," says M. Ricord, "is opposed completely to this opinion. I allow a discharge to continue no longer than I can help. It is never my intention to prolong the discharge; if it continue, it is in spite of my treatment, which has been ineffectual in checking it."

When, about the time of Fernel, blennorrhagia was first arrayed under the class of syphilitic diseases, and confounded with them, mercury of course was used in the treatment of both complaints, which were considered synonymous, and many and severe were the cases of salivation which resulted from such confusion.*

Notwithstanding the distinctions which modern practitioners have introduced, and although it is generally believed that the two affections differ *in toto*, still at the present day many surgeons prescribe a course of mercury either during or after a blennorrhagia. Some consider that small doses of mercury are advantageous as a species of alterative treatment. I shall have occasion to condemn this line of practice at a future period. See page 53.

Sydenham, whose writings all must so much admire, was in the habit of prescribing purgative medicine, and, from his statement, appears to have met with great success.

Tod and his school have much eulogized the use of diuretics, under the supposition that frequent micturition might cause the diseased humor to pass out of the system. Neither of these modes of treatment will be found applicable to private practice in the present day, but I think they may be employed with advantage at dispensaries and hospitals among our patients, a class of persons who, from inattention to the injunctions of the surgeon, it is impossible readily to cure, and it therefore becomes a question if it be not better to palliate symptoms gradually, than prescribe expensive drugs, which fail in these cases to have the desired effect, merely from the negligence of patients. I wish one day it may occur to a reformer of hospital expenses to calculate the cost of a patient laboring under clap, who has been ineffectually taking cubeb and co-paiba for nine months or more; there is no means of estimating the mischief such remedies do the man's stomach, but it would not be difficult to calculate the value of the drugs thus thrown away on the routine practice too often pursued at public institutions, and the cost which might be saved with great advantage to the funds of the institution, and of wear and tear of the bowels of the patient.

These various plans had successively held their sway in the medical world, when Bell proposed that a direct or local treatment should be resorted to. Injections became popular, and then fell into disuse; and it is now generally

* I lately saw, at St. Bartholomew's hospital, a case which must formerly have been very common. An osterler had suffered from clap. Several weeks previous to coming to the institution, he went to a quack, living in the city, who recommended Leake's pills (composed of mercury), and an aperient occasionally: his mouth became sore, and his clap got worse. This charlatan then recommended him to apply to public institution. Under proper treatment he rapidly recovered. See, also, Sir A. Cooper's Lectures, page 300. He states it was the habit, at Guy's hospital, to rub in twenty-eight times, and to make the patient spit three pints a day.

admitted that no one universal panacea can be recommended. Blennorrhagia, like all other diseases, will and must be treated according to the indications present.

Having attempted to establish the fact that at its commencement a blennorrhagia is a local affection, that the number and severity of the accidents which follow depend not only on the severity, but likewise on the duration of the complaint, I should state that it does not at once acquire its greatest severity, and moreover that it is not one of those affections which run a certain course, or last a certain time. I have attempted to prove that suppuration is not necessary to chase the peccant humors from the body, and that we have no occasion to allow the discharge to continue during an indefinite period.

I have further shown that the fear of driving the discharge into the system by a rapid cure, thereby causing certain accidents, is chimerical, and the opposite proposition has, I hope, been established, that the sooner the patient is cured, the less he is exposed to these accidents. It follows, then, that the surgeon should attempt by his treatment to prevent the development, and to diminish the intensity of the symptoms when he has been unable to check them at the onset, and in all cases to shorten the period of their duration as much as possible.

In imitation of the plan of treatment laid down by M. Ricord,

- 1st. I shall speak of the prophylaxis, or the preventive means.
- 2d. Of the abortive* treatment.
- 3d. Of the curative treatment.

PROPHYLAXIS, OR PREVENTIVE MEANS.—A consideration of the causes previously alluded to, renders it evident that the surgeon can not always prevent the occurrence of the disease, as it may arise spontaneously under circumstances over which the patient has no control; yet he may, in the greater number of cases, escape the affection by avoiding the causes which give rise to it; or if the surgeon can not persuade a patient to avoid them altogether, at least he may often be able to induce him to take such precautions as will render the occurrence of the disease less probable or less severe.

Such precautions, then, I now proceed to describe, as may be recommended to a person who is fearful of communicating the disease.

In the first rank stands excessive cleanliness. If a female suffers from any discharge, she should at once communicate with her medical attendant, and learn the cause as well as submit to the treatment necessary; women, however, scarcely ever do this, and it is only after having communicated the disease that they think it necessary to apply to a surgeon. Strict continence should then be recommended, as well as the usual remedies, which will be alluded to in a subsequent chapter.

In the present day I should not, I think, be discharging my duty to my profession or the public, did I omit to call attention to the hygienic condition of that large class of women generally known as prostitutes.

The day, I think, is approaching when it will be no longer possible for the philanthropist, or those intrusted with the care of public health, to conceal, or any longer to trifle with the fact, that in London and in all our large towns, exist a very numerous class of females who gain the whole or a large portion of their subsistence by a life of prostitution. For the purposes of this inquiry, it matters little if with the Bishop of Oxford we estimate their numbers at 80,000, or, as the late magistrate Calquhoun did, at 50,000, or with police-commissioners, compute the recognised street-walkers at 4,000. The influence on society of such masses as these can, I say, no longer, or at least not for many years more, escape public attention. As in similar inquiries, all amendment

* By the term "abortive" treatment, I wish to express such means as cut short the disease before it can be completely established.

must commence with our profession, medical men are the persons who, acquainted more particularly with the evils of the system, must point out its consequences, and it will then be for the public to decide whether they will submit to the present state of things.

The subject of public health is but in its infancy, and there are many other more popular questions which occupy public men at present; but no sooner will they have set the sewers in order, than attention must be paid to that no lesser cloacena, the prostitute; and Englishmen may yet see the day when a board of health may not think it below their notice to point out the precautions to be taken by persons exposing themselves to the contagion of venereal disease, and succoring the unfortunate woman who is conscious that she is diseased, but can not give up the streets, her only resource against starvation.

In the absence of these, I would recommend surgeons who are consulted by women who *expose themselves to contagion*, to strongly urge upon them the necessity of urging astringent or cooling washes once or twice a day, avoiding as much as possible connection just before or just after the menstrual period, and submitting to occasional examination, as the only means of warding off uterine disease, or detecting it when it commences.

The precautions to be taken by a healthy individual who exposes himself to the contagion should consist in not prolonging the venereal act, and in making water immediately after it. The employment of injections into the urethra, I consider highly prejudicial; simple ones serve the purpose only of pushing the contagious matter, if it exist, further down the canal, and irritating ones might occasion disease where none previously existed.

These, then, are the principal means which a surgeon can depend upon, or recommend, to place his patient out of danger of contagion. The host of other specifics which charlatanism has invented, I shall not here stop to enumerate.

THE ABORTIVE TREATMENT.—It has been stated above, that one of our principal objects should be to shorten the period of the duration of blennorrhagia, and to check it at the onset. This we should attempt to effect in two ways, either by general, or local and direct means. The following, or the abortive treatment, is, however, only applicable previous to the occurrence of the symptoms of acute inflammation, that is to say, during the first few days after the disease has declared itself.

The general means will consist in abstaining from all irritating or heating food; not, however, that we prescribe an entire abstinence from meat; a moderate use of nutritious diet should be recommended, as we believe general debility, of itself, tends greatly to produce a discharge from mucous membranes. Small quantities of fluids only should be taken, and warm baths or any relaxing agent should be strictly forbidden, unless there be reason to expect that the complaint depends upon an irritability of the skin or the irritating properties of the urine; in these exceptional cases alone, baths and diluents should be allowed.

In addition to these precautions, rest and quiet to the affected parts must be strongly recommended.

Internally the surgeon should prescribe the use of the anti-blennorrhagic remedies, which seem to possess a peculiar and specific action on the urine, such as cubebas, copaiba, and turpentine; the doses in which they should be administered will be further alluded to, when mention is made of the particular forms of the complaint. These preparations should be given in sufficiently large doses, and at short intervals, so as to produce a sudden effect on the system. Various powerful quack medicines owe their efficacy as anti-blennorrhagics to this mode of action. The surgeon must not discontinue these remedies quickly, but gradually diminish the dose; by such means the cure will be found to be permanent.

Local baths are to be avoided, as they tend to increase rather than to diminish the secretion. However, ice and cold lotions (provided no reaction follow) may be attended with benefit. Separation of the surfaces of the mucous membrane (when that is possible, as in gonorrhœa preputialis) will be among one of the direct means from which the surgeon may derive much advantage; for, as we have previously observed, one diseased mucous surface infects the other, and augments the mischief. In addition to these means, great attention must be paid to cleanliness; and the utmost dependence should be placed upon injections of various astringent or tonic substances, the nature and strength of which will be spoken of again under the head of *regional forms of blennorrhagia*.

Provided, however, these means fail in curing the patient, or if the surgeon be consulted at a late period, when symptoms of acute inflammation are present, it will be in vain, and even dangerous, to pursue the treatment above spoken of, as it would tend only to augment the mischief; it therefore must be given up, and this leads me to speak of

THE CURATIVE TREATMENT.—The first stage, or the acute form, particularly if the inflammation be severe, may require general or local bleeding; usually, however, leeches will suffice, care being taken that we do not apply them on those parts where the skin is doubled on itself and maintained by a loose cellular tissue, as occurs on the scrotum, eyelids, or penis: for although twenty cases might be cited in which no ill consequences have arisen, still the twenty-first is liable to be followed by gangrene or erysipelas; and as equal advantages follow the application of leeches to the surrounding parts, namely, the groin, perineum, or temples, the surgeon should never expose his patient to the danger of these accidents. In virulent blennorrhagia especial care should be taken that the leeches are not applied on a depending part of the body, otherwise, if the secretion falls, or comes in contact with the punctures, inoculation will result, and a distinct chancre will be formed on every leech-bite. I once saw a case of this kind at the Female Venereal hospital, where thirty chancres existed on the perineum, in consequence of the application of thirty leeches, prescribed by a *sage femme*.

Leeches will sometimes produce an erythematous irritation and swelling of the neighboring glands, therefore it will be well for the surgeon to apprise his patient that this is probable; poultices and rest will, however, soon relieve the complication.

In the abortive treatment I have condemned the use of baths, but in this, the acute stage, baths are of the greatest benefit, when employed of such a temperature as is agreeable to the patient's feelings. Provided no reaction comes on, the patient may continue in the bath for half or three quarters of an hour. In other cases their use should be omitted. Local bathing is prejudicial, as tending to cause congestion of the part.

Injections are in some cases useful; in the vagina they wash away the secretions; but in a narrow canal like the urethra they cause great irritation.

Diluent drinks may be freely employed, as they tend to render the secretions less irritating; the composition of them must depend upon the taste of the patients, as it is the water they contain which is beneficial. The use of diaphoretics should be strictly forbidden, for reasons stated above.

The condition of the digestive organs should be attended to, as all mucous membranes sympathize with the stomach; constipation or diarrhoea must, therefore, be avoided. In addition, the horizontal posture should be prescribed as well as strict attention to diet, avoiding everything that can excite, particularly beer, asparagus, &c.

Having terminated what I have to say on the treatment of acute blennorrhagia, I now turn to the chronic form, which is called blennorrhœa.

TREATMENT OF BLENNORRHAEA.

The first point in the treatment is to omit the antiphlogistic remedies, as they become useless the instant acute inflammatory symptoms subside. In their place the surgeon should prescribe those remedies which were recommended under the head of abortive treatment. Warm baths must now be laid aside; the diet should be more nutritious, but not stimulating; in addition, a general revulsive treatment, combined with a local or direct one, should be prescribed, for experience proves that although a cure may take place when either mode is employed singly, still, when conjointly used, they act more surely and effectually.

THE REVULSIVE GENERAL TREATMENT consists in the employment of copaiba, cubeb, turpentine, purgatives, astringents, tonics, iodine, and cutaneous revulsives, in the order of their efficacy.

As I shall have occasion to speak of these various remedies at a later period, in describing the treatment of the various regional forms of blennorrhagia, I shall now pass them over, reserving the description of each of their properties and doses until then. Having made these general remarks on blennorrhagia, I shall pursue the plan I have previously laid down, and describe seriatim the disease as it may occur in one or the other sex, and in the different mucous membranes.

CHAPTER II.

BLENNORRHAGIA IN THE MALE.

THE forms of blennorrhagia peculiar to the male are balanitis and gonorrhœa; affections of very great importance to the surgeon, and which I shall successively describe at some length.

SECTION I.

BALANITIS.

SYNONYMOUS TERMS.—English writers have described the complaint here spoken of, as balanitis, by the terms gonorrhœa præputialis, bastard clap, external gonorrhœa, &c. Of late years it has been generally known in France by the name of *balanite*, the equivalent form for which I shall employ in the following pages.

DEFINITION.—Balanitis consists in inflammation and patchy excoriation of the glans penis and lining of the prepuce, accompanied by a muco-purulent discharge.

CAUSES.—The *predisposing* cause of balanitis is undoubtedly the existence of the prepuce, for we do not meet with the affection in persons who have been circumcised.

“The prepuce,” adds M. Ricord, in one of his clinical lectures, “is an appendix to the genital organs, the use and object of which I could never divine; in place of being of use, it leads to a great deal of inconvenience, and the Jews have done well in circumcising their children, as it renders them free from one of the ills of humanity. The prepuce is a superfluous piece of skin and mucous membrane, which serves no other purpose than acting as a reser-

voir for the collection of dirt, particularly when individuals are inattentive to cleanliness."

The exciting cause can be usually traced to the application of some irritating secretion, such as menstrual fluid, blennorrhagic matter, &c. ; but although frequently of venereal origin, this affection often depends upon other causes than impure connection. I have frequently occasion to see it in boys who are inattentive to cleanliness, and allow the secretion of the glandulæ odoriferæ to accumulate between the prepuce and glans.

At page 28 I have cited a severe case of the complaint, contracted by a married man from the acrid secretions of his wife, many months gone in the family-way. We not unfrequently meet with the complaint, in persons who have had abscesses close to the frænum, and which have left little fistulæ, through which the urine exudes. In these last cases, the only method of permanent cure is treatment of the fistula, as I shall have occasion shortly to remark.

As I stated above, the disease may affect either the prepuce or glans in part only, or the whole surface may be the seat of the inflammation ; it is particularly liable to occur in the neighborhood of the frænum.

The SYMPTOMS of the affection are the following : a slight itching, which is soon after succeeded by heat and pain, attended by an increased secretion of the glands, which becomes more or less purulent. The prepuce soon swells, in consequence of a tumefaction in the cellular tissue, which so largely enters into its composition, and this swelling may occur in a very short period. Not unfrequently an inflammatory or erysipelatous condition succeeds this œdematosus state, and may be confined to the prepuce only.

Usually no pain is felt in making water, nor does any chordee exist ; in a few cases, however, when the urine passes over the inflamed prepuce, a scalding is felt, and in erection the glans becoming too large for the swollen parts around ; a pain like that experienced in chordee may occur ; and it is very difficult, when phymosis exists, to decide whether balanitis is accompanied with gonorrhœa or not.

In the more advanced form of the disease, on uncovering the glans penis, the whole of that organ is found bathed with purulent matter ; if this be wiped away, the surface has partially a raw appearance, like a blistered surface, and the secretion will soon reappear. These erosions are irregular, very red, and stand well out in relief to the shreddy white edges.

Balanitis is usually acute in its progress, but it may become chronic. Its termination is commonly favorable ; however, gangrene sometimes ensues as well as erysipelas, more especially if the surgeon applies leeches on the diseased and œdematosus prepuce.

COMPLICATIONS.—Balanitis, however, is not always the simple affection I have here described ; in some instances abscesses may form in consequence of the collection of matter between the glans and prepuce, which becomes swollen, or may have been naturally narrow, or a circumscribed inflammation of the cellular tissue of the prepuce result, terminating in abscess ; in either case these collections of matter will point at the upper part of the penis, and gangrene will often attack the prepuce, and destroying it, the glans penis will become exposed. Gangrene rarely commences at any other point than this, and may destroy the whole penis, or be limited to the prepuce, as was the case in the individual from whom the drawing was taken. This tendency of the prepuce to become gangrenous at its upper part has been variously accounted for. Some suppose it to depend upon the greater number of vessels in this situation, but it more probably arises from the friction against the trousers to which it is subject in all the movements of the body.

A very frequent complication is chancre, which, masked by a narrow prepuce and purulent discharge, leads the surgeon to believe that the patient is suffering under simple balanitis.

Secondary symptoms may become also a complication. Thus the mucous tubercle, occurring on the prepuce, which is already the seat of a balanitis, will increase the disease ; it will likewise be one of the causes of it ; hence we have what is called, improperly, *a syphilitic balanitis*, for the complications produce or exaggerate balanitis, not in virtue of any specific poison, but as a consequence of the secretion, which is very acrid. Eczema, particularly in old people, will constitute a complication, and, like vegetations, will be more difficult to cure, in proportion as the surgeon is unable to expose the glans.

Balanitis without any complication of chancre may cause a bubo ; this, however, is rare, and we seldom find that buboes arising from this cause suppurate ; they are merely sympathetic, and when they do suppurate, never give rise to virulent sores capable of being inoculated.

Secondary symptoms never arise as a consequence of simple balanitis. Such is the result of M. Ricord's researches on inoculation. I have never heard a case of simple balanitis cited which was followed by secondary symptoms.

M. Puch, one of the surgeons at the Venereal hospital in Paris, considers that simple balanitis may produce a chancre, and thus induce secondary symptoms. He inoculated a patient affected with simple balanitis, unaccompanied by chancre, but in whom vegetations existed. The characteristic pustule was observed, and he had the kindness to show me the case, and concluded that simple balanitis without ulcerations may give rise to syphilis. This conclusion I can not adopt, for the following reasons : he admits himself, that it is an exceptional case to see the inoculation succeed ; he has observed it in two cases. M. Ricord has never met with similar results ; it is, therefore, natural that we should seek an explanation of it in some circumstance beyond a simple balanitis. I believe that many circumstances may explain this occurrence ; the patient, before entering the hospital, had connection, and as his prepuce was long, the syphilitic virus may easily be supposed to have remained within its folds without producing chancres, as the glans was covered with mucus and smegma ; for we find that this virus does not produce its effect until it comes in contact with the mucous membrane or skin, or till an abrasion results, or it is introduced into a follicle. The virus may remain on the prepuce inert, provided there is a secretion which protects it, in the same way that it may be kept in glass tubes, and yet at the end of the eighth day produce a chancre. I believe, then, that the true explanation of those exceptional cases depends upon some such cause.

The DIAGNOSIS of balanitis is very easy, provided the surgeon can uncover the glans, and see in what state it is ; but when phymosis is present, the practitioner is often at a loss to know whether a simple balanitis exists, or if it be complicated with a gonorrhœa, chancres, or vegetations. In these cases, an induration may often be felt on the prepuce, and, on interrogating the patient, it will be found that a chancre existed before the phymosis took place ; but if no induration exist, and if the patient have not examined the penis, our diagnosis will be very imperfect ; still one means is within our reach—it is that of inoculation.

The PROGNOSIS will depend upon the complications present, for simple balanitis presents nothing unfavorable.

The TREATMENT of balanitis in uncomplicated cases is very simple ; it consists in washing the parts, carefully drying them, and by means of dry lint, accurately placed between the glans and prepuce, separating the two surfaces. I have cured in twenty-four hours, by this plan alone, patients who have been applying black wash, zinc ointments, and the usual changes from ointments to washes during as many weeks. Isolation is the secret of the cure, whereas moisture is the cause of the complaint. Having applied the lint, draw the pre-

puce over the glans, and remove the lint twice a-day, with the precaution above observed.

When a slight inflammatory condition of the parts exists, it will be well to pass a stick of caustic over them, simply to whiten the surface, which should be previously dried by lint; and order the affected parts to be washed twice daily with the following lotion:—

R. Zinci sulph.	
Acid Tannici.....	ââ gr. ij.
Aqua.....	ij.
M. ft. lot.	

Having dried the glans and prepuce, dry lint should be again employed, and the parts may, at the expiration of twenty-four hours, be again touched lightly with caustic, if a complete cure be not effected.

When balanitis is complicated with chancre, of course we must employ the treatment which the latter complaint may require, and which will be described in the Second Part of this work.

It has been supposed that in such cases mercury should be given; but this is quite contrary to our present experience. The following letter to the "Medical Gazette," December 7, 1849, will further illustrate this subject, as showing the erroneous notions which have been entertained on this subject, and put my readers in possession of the epitome of my views on the subject of mercury.

"Sir: My attention has just been called to the following extract from a lecture of Mr. Bransby Cooper in a recent number of your journal; and I have been asked by a former pupil of M. Ricord if that gentleman does, or ever did, entertain the opinions here expressed:—'If, then, it is found that the discharge continues obstinately, and that there are sores beneath the prepuce, it must be divided; and if small swarthy excrescences be perceived the prepuce ought to be freely laid open. For such a case Ricord would inoculate the patient with some of the matter; and if a chancre were the result, he would proceed at once to administer mercury, upon the conviction that the disease was specific in character.' (Med. Gaz., p. 872).

"I should not have troubled you with the following refutation of the statement that 'if a chancre were the result he would proceed at once to administer mercury,' did I not find that some of the senior members of the profession in London entertain similar opinions to those of Mr. Cooper, and as such opinions sap the very foundation of the important investigation M. Ricord has made on inoculation, I feel called upon to state, in as few words as possible, what I believe my friend and preceptor, M. Ricord, really thinks to be the object of inoculation, and of the truth of which daily observation in Paris and London has convinced me.

"In the first place, inoculation has settled many theoretical points, which previous to M. Ricord's investigations were believed by some and doubted by others. It has proved that gonorrhœa and syphilis are two distinct diseases. It has explained why a discharge from the urethra may be followed by secondary symptoms, in consequence of the existence of a chancre in the canal.

"In medico-legal inquiries it will often enable a surgeon unhesitatingly to decide upon a sore (situated in some suspicious place) being either an ulcer or a chancre, as in instances of intractable sores on the lip, nipple, or anus. It has already shown that true syphilitic sores will get well without mercury; this, previously to our knowledge of inoculation, it was impossible to prove, particularly as it had been asserted that such sores were nothing but simple ulcers: inoculation, however, decided that they were chancres.

"These, then, are some of the practical benefits we derive from inoculation, and I hope I have mentioned enough instances to prove the value of the test. But when we inoculate a patient, and the characteristic pustule is " " "

neither M. Ricord nor his pupils 'proceed at once to administer mercury : such a doctrine we repudiate. On the contrary, as shown by our experiments, inoculation has thousands of times proved 'the conviction that the disease is specific in character,' can be cured, and is under our treatment entirely removed in the majority of cases without mercury. I may add, the giving or withholding mercury after inoculation has produced the characteristic pustule, depends upon far different grounds from those Mr. Cooper supposes M. Ricord to act on. Daily observation on the treatment of others uncontestedly proves the danger of indiscriminately giving mercury. Experience would, indeed, have been thrown away upon us, did we, in the nineteenth century, continue to give mercury in this wholesale way. On the contrary, practice tells us we can cure the simple chancre locally, with water dressing ; the phagedenic and irritable ulcer with iron ; sloughing phagedena with opium ; and many forms, even of the indurated Hunterian chancre, with iodide of potassium : we thus reserve mercury almost exclusively for some forms of indurated chancres which still require the mineral. Instead, then, of being the mercurialists we are supposed, we prefer placing ourselves among the eclectic school ; neither altogether withholding mercury, as some have done, nor indiscriminately giving it, as was the case a few years ago in this country.

"That the preceding observations may not be without interest to your readers, and contribute to the modern doctrines of syphilis being better understood, is the sincere wish, sir, of your obedient servant,

"W. ACTON."

The complication of phymosis presents some difficulties, as it is often impossible to act directly on the diseased parts. The surgeon should first bear in mind, that he ought not to operate on the prepuce unless urgent symptoms demand it, particularly if the phymosis be not habitual. Instead of slitting up the prepuce, lint wrapped round a probe may be carefully introduced between the glands and prepuce, so as to wipe away all secretion ; and having gently drawn forward the prepuce, a stick of solid nitrate of silver may be introduced, and the parts quickly brushed over with the caustic—and the foreskin syringed out from time to time with warm water, or astringent washes.

In other instances it will be well to syringe out the prepuce with warm water, and inject, by means of a glass syringe, a strong solution of nitrate of silver, made in the following proportions :—

R. Argent. Nitrat. Crystall.	3 ss.
Aqua Destill.	3 iiij.
M. ft. Inject. ter die applicand.	

The immediate consequence is considerable augmentation of pain, which may last for half an hour, but on the following day the amendment is very marked. Baths, and injections containing opium are useful, but not so advantageous as cauterization : it is the best antiphlogistic remedy with which I am acquainted.

As soon as the inflammatory symptoms have abated, and the surgeon has cured the balantis, he may recommend the patient to have the phymosis remedied. This may be done by introducing a sponge tent covered with wax ; this will often succeed in dilating the prepuce. If this fails I should recommend the

OPERATION FOR PHYMOSIS.—When the patient will submit, circumcision is the best means of removing the prepuce, all other plans are very objectionable. The way M. Ricord proceeds, is as follows : "The patient having taken chloroform, and placed in a convenient position, the surgeon, without any traction of the skin of the prepuce, should trace with ink a circular mark, just in front of the glans penis, and following its direction.

"A long needle, the point of which is covered with wax, may now be intro-

duced between the glans and prepuce, and then passed through the prepuce, in front of the circular mark, and exactly in the mesial line. The mucous membrane and the skin of the prepuce are thus fixed by the needle, which may be allowed to remain. A pair of peculiar shaped forceps, made for the purpose, (the branches of which are fenestrated and notched), are placed behind the needle in a longitudinal direction, and are intrusted to the care of your assistant. The fenestrae of the forceps correspond to the circular mark made in the first instance, and the glans is felt behind. Five or six sutures may now be passed between the fenestrae of the forceps. When the sutures have been introduced, the prepuce should be sliced off by a bistoury, which is passed between the first needle and the forceps. The threads are thus left when the forceps are withdrawn. The assistant should be desired to hold the forceps firmly while the section of the prepuce is being made; unless this precaution be taken the prepuce may slip, and the threads be cut by the bistoury. Any arteries that bleed may now be tied, or tortion employed; the threads may now be cut in the centre, and so tied that the mucous membrane and skin may be brought together, and thus the number of sutures will be double that of the threads passed. The patient must be kept quiet, water-dressing applied round the penis, and camphor pills prescribed to prevent erection. It seldom happens, however, that union, by the first intention, takes place. On the following morning we usually observe infiltration of semen into the cellular tissue, but this is gradually absorbed. The sutures may be removed on the fourth day, after that they are liable to do mischief. A complete cure may be expected from the tenth to the fifteenth day, although, where union by the first intention takes place, it may occur on the fourth or fifth."—*Gazette des Hopitaux*, 1847, (page 449).



Operation of Circumcision.

I have been in the habit of operating in the manner shown in the wood-cut above, and the results have been so satisfactory that I have seen no reason to change the plan. Without employing any traction, I trace in ink a line on the prepuce, which follows the circumference of the base of the glans, and is a little in front of it. This being done, the prepuce should be drawn forward and fixed between the blades of a pair of dressing forceps placed in front of the glans, and behind the line of ink traced on the prepuce; let the forceps be then held in this position by an assistant. Let that portion of the prepuce which is in front

of the forceps be now drawn forward by the left hand of the surgeon, while, at the same time, he with the right divides it in the oblique direction of the forceps, which thus protects the glans. In this operation the skin alone is removed, the mucous membrane is not drawn forward with the skin, and remains intact; if we do not wish to see a phymosis recur, this portion of mucous membrane must be removed. To effect this, I employ a pair of scissors, slitting up the thin layer of mucous tissue as far as the base of the glans; the two portions should then be successively held apart by a pair of forceps, and removed by dividing them at the base of the glans, as far as the frænum, which is divided the last. I generally employ torsion of the arteries in these cases to check the bleeding; lint dipped in cold water is then applied, and it may be advisable to administer an enema containing opium in the evening, or to prescribe camphor pills to prevent erections. A perfect cure takes place about the twentieth day, and the result is very satisfactory; there is no deformity, nor have we to dread a consecutive paraphymosis.

It frequently, however, happens that the patient will not submit to circumcision, or there may be considerable induration of the cellular tissue of the penis, and yet an operation may be required, provided phymosis have existed previous to the balanitis. In such a case as this a narrow knife, the point of which is protected with wax, should be passed between the glans and the prepuce in the mesial line, and the point then thrust through the prepuce, and by drawing its blade toward the operator, the whole thickness of the prepuce will be divided. The result however is, that two flaps will be left, which will swell and become infiltrated every time the patient subsequently indulges in connection; they must therefore be removed; and this is best done by slitting up the prepuce, by re-introducing the point of the knife close to the frænum, and then seizing each flap with a pair of dressing forceps, slicing off the flaps in front of the blades of the instrument; should haemorrhage occur a needle should be passed below the vessel, and a twisted suture employed, which will immediately stop the bleeding. The after-treatment is the same as in the former case.

If the patient will submit to one incision only, it is better to slit up the prepuce close to the frænum; the subsequent deformity will be less, and a sort of apron only left, which is less liable to become infiltrated than when the incision is made in the upper part, at the mesial line; but in this last case, on cicatrization occurring, there will be a partial phymosis, which is nearly as annoying as the original complaint, and the deformity nearly as great. This partial operation should never be done unless the patient will submit to no other.

If the surgeon, however, be consulted at a later period, when gangrene is imminent, or has already commenced, the prepuce should be freely slit up in the upper portion, and in the mesial line, without delay, so as to expose the part; and compresses of cold water, or solutions of opium, should be constantly applied.

The indications for cauterization, or for incision, are sometimes obscure. When, however, the discharge consists of thick pus, we should cauterize, and the patient thus preserves the prepuce, for in a few days he is able to uncover the glans; moreover, if there be a chancre, an incision is very prejudicial, as it most probably will inoculate the divided surface.

The indication for slitting up the prepuce consists in a discharge of ichorous matter, or when the skin has assumed a dark livid color; if the surgeon does not operate in these cases, nature herself will form an opening.

In cases of balanitis, the surgeon should be particularly cautious that the glans is not left uncovered, as inflammation and swelling may occur, and paraphymosis result, a complaint fully treated of under the section Complications of Chancre.

SECTION II.

GONORRHŒA, OR URETHRAL BLENNORRHAGIA.

THE next form of blennorrhagia I am about to describe, as it exists in the male, is that form called *Gonorrhœa*.

SYNONYMOUS TERMS.—M. Ricord calls it urethral blennorrhagia; some French writers denominate it venereal catarrh; in England it is vulgarly known by the name clap, derived from the French word *clapier*, signifying a filthy access; and in France the common people call it *chaude pisse*.

As the term *gonorrhœa* is generally accepted, I shall employ it, for the reasons stated at page 23, rather than change the name of the affection, and at once proceed to treat of the conditions which tend to its development.

CAUSES.—The causes of gonorrhœa have already been fully discussed at page 24, under the general term "Blennorrhagia," and it is alone the special circumstances affecting the urethral membrane that require further notice here. It may be mentioned that a relative disproportion between the genital organs of the male and female will be a cause of the development of gonorrhœa. I have reason to believe that, in many cases of rape, where the male is said to have diseased a little girl, the discharge she is suffering from does not depend upon gonorrhœa communicated by the male, but in many instances is caused by the violence offered to the parts in the act of intromission, and is not absolutely a proof that the male has previously suffered from discharge, although in many instances this is known to be the case, as ruffians believe that connection with virgins has the power of relieving them of the discharge. Popular prejudices are generally said to have had their origin in the studios of scientific men; and this most lamentable notion has, I believe, obtained currency from surgeons (who were unable to cure gleets) having formerly recommended their patients to contract a fresh clap in the erroneous belief that both diseases would disappear together. Other authors have entertained the notion that this belief, so generally current among the lower classes, has arisen from the charm innocence is supposed to have had in the power of healing. Whatever the origin, however, the ruffian idea will still, I fear, do much mischief before being eradicated, so deeply is it rooted in all parts of Europe.

Where contagion is the cause of gonorrhœa, we believe the complaint to depend upon the secretion coming directly in contact with the mucous membrane of the urethra; judging from experience, although no experiments have been made on the subject, the contact of the matter need not be long in order for gonorrhœa to occur.

It is probable that the introduction of the gonorrhœal matter takes place previous to ejaculation, and that it is the expulsive force with which the semen issues that washes away the contagious matter; for, unless such were the case, I am convinced that gonorrhœa would be still more common than it is.

During erection, and previous to ejaculation, the meatus has a great tendency to open; the round form of the glans further promotes this tendency, as it is pressed laterally when passing the vagina, thus naturally separating the lips of the meatus. Hence a large penis and a wide meatus make the owner more susceptible to the disease than persons born with an opposite condition of parts.

Some writers, not content with this explanation, believe that gonorrhœa does not occur from direct contact of the pus, but suppose that absorption from the external part takes place, and that the secretion is directly carried into the glands of Morgagni, situated just within the fossa navicularis.

COURSE OF THE DISEASE.

I might myself have given an account of the disease, but I have lately read so admirable a description in a lecture delivered by my former master, M. Ricord, reported by his interne, M. Melchior, in the "Gazette des Hopitaux" for 1847, page 473, that I have preferred translating the lecture entire, as it leaves little more to be said on the subject:—

"Blennorrhagia of the urethra may be divided into phases or periods which succeed one another, provided the inflammation is not checked. In the first period, the balanic region is alone affected; indammation then extends itself backward, arriving at the spongy or bulbous portion; in a short time it gains the membranous region, and reaches the prostatic portion, and sometimes the neck of the bladder.

"Hunter attributed virulent properties to blennorrhagia when it was seated in the balanic portion: in his opinion the virulence of the disease completely ceased when the deeper strictures were affected. This opinion, which, according to our doctrine, might appear absurd, finds easily its explanation in facts: we know that a blennorrhagia is only virulent provided a urethral chancre exists. Now, as the urethral chancre is nearly always seated in the balanic region, its secretion coming into contact with the mucous membrane which is behind, only irritates it without inoculating; it is not, then, astonishing that Hunter, who was not acquainted with the urethral chancre, believed in a virulent discharge from the balanic region, and in a non-specific discharge from the posterior part.

"Blennorrhagia commences generally from three to eight days after connection. Its commencement is marked by a slight itching, which often escapes the attention of the patient; a somewhat agreeable titillation and abnormal excitement of the genital organs follow: these symptoms soon change into real pain, which micturition increases; both the lips of the meatus become red and tumefied, and the mucous membrane is averted, and the secretion drying at the opening of the urethra, glues together the two edges. If these symptoms continue, the surface of the glans becomes red and inflamed; patients can not make water without experiencing in the fossa navicularis very severe scalding. This pain may be occasioned by three causes: 1. The acrid condition of the urine. 2. Inflammatory narrowing of the canal. 3. Inflammatory state of the mucous membrane. It is only necessary to mention these causes to comprehend how they act; pain, which until now has been intermittent, becomes continual and heavy; it is spontaneous, and augmented by the weight of the clothes or pressure; it is acute in proportion as the inflammation gains in depth, and has a tendency to pass to a phlegmonous condition. The secretion, which at first was clear or slightly opaque, becomes thick and more highly colored; the inguinal regions are slightly painful, sometimes becoming the seat of inflammatory buboe; the glans then looks red and firm; in the inferior part a hard cord is felt, which has sometimes been taken for a urethral chancre, but which is nothing more than the swollen canal of the urethra; it is not uncommon to observe the swollen lymphatic vessels, which may be traced as far as the inner side of the inguinal regions, when they terminate in the swollen glands. If the inflammation is not stopped, it attacks the whole spongy portion of the canal. New symptoms now arise: more or less painful tension of the urethra is felt, and pain in all that portion of the canal in front of the scrotum, and a feeling of inconvenience and suffering between the testicles, on a level with the bulb; when the inflammatory swelling has gained the deeper portions of the canal, a new and more alarming symptom arises, namely, chordee. This symptom, which Hunter has described, is but the result of inflammatory swelling; in fact, the walls of the canal having lost their elasticity, can no longer follow the

increase of the corpora cavernosa in erection ; the penis is thus bent upon itself, and represents a bow, the string of which would be the canal. During erection, pain seems to concentrate itself in the least moveable part of the urethra, where all the elements of inflammation are present, namely, at the angle where the penis and scrotum join. Chordee is, then, a sign of inflammation of the spongy portion of the urethra. It is rare to find urethral inflammation stop at the bulb, it generally reaches the membranous portion ; the patient then feels inconvenience and pain, sometimes very severe, in the perinæum. During erection, complaint is made of a dragging sensation behind the scrotum, as the cord does not extend beyond that ; the pain caused by erection is not diminished by drawing down the penis.

" Pressure on the perinæum augments the pain, and sometimes renders it insupportable. When inflammation has gained the prostatic region, new symptoms announce its progress : the perinæal pain augments, there is a great feeling of suffering ; if patients wish to sit down or cross their legs, they are prevented by the acute pain ; the passage of the urine produces scalding, commencing at the posterior portion of the canal ; the stream is very small, and the direction may be altered as in stricture ; the testicles become painful, the cremasters are affected with sympathetic vermicular movements, constipation comes on, and at this period the neck of the bladder often becomes affected ; the desire of making water is more frequent, amounting almost to incontinence ; pain, caused by passing water, is now very intense, and after the bladder has been emptied the feeling of a desire to make water continues, which is augmented by a very painful vesical tenesmus ; the last drops of urine which pass under these contractions are thick, milky, and sometimes contain blood ; the blood and mucus are pressed out of the follicles of the prostate during the last moments of micturition ; sometimes these last drops are replaced by a discharge of blood or pus. Most frequently blennorrhagia stops at the neck of the bladder ; nevertheless, it sometimes continues its course, and may produce inflammation of the bladder itself, and assume the catarrhal or phlegmonous form. In these very rare cases, inflammation may extend itself along the ureters to the kidneys, producing nephritic blennorrhagia. This disease is far, however, from being so common as some authors suppose, who have mistaken pain caused by cubeb or copaiba for blennorrhagic nephritis : these lumbar pains, although sometimes very violent, disappear in a few days, provided these medicines are suspended. The secretion does not contain vibrios. When blennorrhagia has reached its highest, it remains in that state for some days and then subsides ; this is known by diminution of pain, and by the discharge becoming clearer and more limpid ; nevertheless, chordee may continue, for rigidity of the tissue does not all at once disappear. It is rare for the disease to be completely cured ; most frequently it becomes chronic, pain altogether disappears, but a muco-purulent discharge remains, which is called gleet. This is only apparent in the mornings, in consequence of the mucus having accumulated during sleep. Some patients arrive at this last period gradually, but more frequently the inflammation declines, and relapses in consequence of the patient's indiscretions. Sometimes a relapse comes on from sexual intercourse, but then the disease does not pass through the phases we have described, but becomes at once again purulent on the morning following connection : these relapses have been called blennorrhagia by repetition.—(*Gazette des Hopitaux*, 1847, p. 473.)

THE DIAGNOSIS OF GONORRHœA.—Every tyro in medicine will at once distinguish what he calls a clap, by means of the symptoms above described ; but such a person may not be aware that a surgeon experiences occasional difficulty in deciding at once whether a man is suffering under a gonorrhœa or not, provided traces of the affection are absent at the moment of being consulted,

the lips of the urethra uninflamed, and the patient anxious to conceal the disease. Cases similar to the following are occasionally met with; a surgeon is called on by a magistrate to give an opinion whether or not a prisoner, said to have violated a girl, is laboring under gonorrhœa. The accused presents no swelling of the lips of the meatus; on pressure, no discharge comes from the urethra, and there exists no traces of any secretion on the shirt. When interrogated, he states he has made water several hours previously to the examination. If any suspicion exists, he must be ordered to pass his urine at the time, and a watch set on his actions, otherwise he may remove traces of the discharge, and be considered unaffected, when he in reality is laboring under the complaint.

The diagnosis of gonorrhœa, as it occurs in *the various portions* of the urethra, I have above spoken of, and shall not repeat what was then said, except to observe that these distinctions are of importance, as they lead the surgeon to foretell the probability of this or that complication arising; the patient is not then taken by surprise, and does not accuse the surgeon of bad treatment.

The PROGNOSIS must be drawn from the general and local symptoms, which it is unnecessary for me here to refer to.

The COMPLICATIONS which may occur are numerous; we shall again quote M. Ricord. (*Gazette des Hopitaux*, 1847.)

"Let us now review the accidents which may complicate the disease I have just attempted to describe.

"1. *Inflammation of the Lymphatic Glands.*—This happens rarely except when the balanic portion is affected. Moreover, it is a rare accident, resolution occurs in a few days under ordinary treatment.

"2. *Febrile Reaction.*—Urethritis occasions sometimes febrile reaction. This febrile state may occasionally take on an intermittent type. It is when the inflammation has gained the neck of the bladder, that these general symptoms manifest themselves. It is very important to recognise their source so as not to expose the patient to superfluous treatment.

"3. *Dysuria.*—Dysuria, which may be considered a symptom completely allied to blennorrhagia, may become so intense that it constitutes a real complication; retention of urine which may accompany it is sometimes the result of spasm of the urethra. This happens when inflammation is seated in the musculo-membranous portion. In such cases as these the bladder may be reached by a large bougie, and nevertheless the patient be unable to make water without recourse to the catheter.

"Retention of urine may also be the result of inflammatory swelling of the walls of the canal, and in all its regions indiscriminately; but the swelling occurs in spots, for here, as in phlegmonous erysipelas, inflammation concentrates itself in certain isolated points.

"4. *Abscess.*—Urethral abscesses consequent on blennorrhagia are frequent enough. They are seated pretty frequently on each side of the frenum, or toward the point which corresponds with the penoscrotal angle. We meet with them sometimes in the intermediate portions. Behind the bulb the inflammation readily gains the glands of Cowper. It is from this point that the inconveniences and the perineal pain arise, symptoms characteristic of mucitis, which is situated at the membranous region. Abscess in Cowper's glands is so far remarkable, that it is situated at the side of the raphe; one gland alone may be attacked, as may be witnessed in the vulval glands, or when one testicle becomes affected as a consequence of gonorrhœa. When the inflammation has passed beyond the membranous portion, it may occasion inflammation of the prostate, or of the epididymis, rarely, however, of the didymis.

"But before commencing the history of these complications, let us return for an instant to abscesses. When they happen in the phlegmonous period of blen-

norrhagia, they are the consequence of the propagation of the urethral inflammation to the surrounding cellular tissue; such are extra-urethral abscesses. The pus which they contain has a tendency to make its way to the mucous or to the cutaneous surface. If left to themselves, they have a great tendency to open into the urethra. This accidental opening constitutes an internal blind fistula; the urine which passes into the pouch acts as an irritating body causing ulceration, and thinning the walls from within outward, causes a communication between the cutaneous and mucous surfaces. The fistula is then complete, and gives ready passage to the urine. These fistulae occur frequently in that portion of the urethra which is in front of the scrotum, where the structures are soft and very moveable. This facility of movement is most unfavorable for cure. It is necessary, when a surgeon has satisfied himself of the existence of these abscesses, to open them early, in order to prevent ulceration of the urethral mucous membrane. We shall return again to the treatment of these complications require.

"5. *Inflammation of the Prostate.*—This is a rare complication, which depends either on a too great intensity of inflammation, or on faulty treatment. When the complaint commences, all the symptoms become aggravated. There is an increase of perineal pain, throbbing, difficult and painful micturition, retention of urine, constipation, and severe pain when the patient goes to stool. If the patients attempt to sit down or cross their legs the pain becomes more intense. It is stated that one of the symptoms of the complaint consists in the existence of a depression on the faecal matter formed by the impression of the swollen prostate projecting into the rectum; but this depression forms at the moment that a consistent faecal mass passes on a level with the prostate. We can easily conceive that this ought to be destroyed during the time that the motion passes the anus, which is much narrower than that portion of the rectum which corresponds with the prostate. The finger, introduced by the rectum, may be of great assistance in the diagnosis, and may often satisfy the surgeon on the degree of swelling of the prostate and its fluctuation, provided the organ contains pus. When one of its lobes, or a part of a lobe, alone participates in the inflammation, the swelling will be irregular. Sometimes the inflammation passes by this organ in order to attack the vesiculae seminales; the swelling is then at a greater distance from the median line, the generative function is increased in activity, and the patient is tormented by very painful nocturnal pollutions. It is important to establish these distinctions, for at this period the vesiculae seminales present a sense of tension which might be taken for fluctuation. It is easy to conceive the danger which would result from incising these organs. Inflammation of the prostate and vesiculae seminales is followed by very severe local symptoms, but is not always accompanied by general reaction. Sometimes, however, vomiting, constipation, meteorism, and other nervous symptoms occur, as well as fever. Inflammation may spread along the sub-peritoneal cellular tissue, to gain the peritoneum. Abscesses of the prostate may open into the rectum; and it is generally during defæcation that a discharge of pus takes place. In the larger proportion of cases the purulent abscess opens into the urethra or bladder in front of or behind the neck of that organ. If it opens into the bladder, pus only escapes when the patient makes water; if into the urethra, the matter escapes in a jet at the moment of its spontaneous opening, and at the intervals between making water. Both these results may be followed by urinary fistulae; its opening into the rectum does not give rise to this complication. We shall see, in speaking of treatment, that it is preferable to give exit to the suppuration before an abscess is far advanced.

"6. *Rupture of the Canal.*—It is in blennorrhagia, complicated with chordee, that we observe this accident. It may be spontaneous, and happen during erection or ejaculation, but frequently it is during connection that rup-

ture takes place ; more frequently still it is caused by the custom of rupturing the supposed cord formed in the urethra during erections. It is most frequently to herbalists that these patients address themselves, when anxious to submit to such an operation. As a consequence of the rupture of the urethra a discharge of blood takes place, sometimes sufficiently abundant to cause severe haemorrhage. This discharge of blood effects the purpose of local bleeding, and relieves the patient most frequently, provided it is not necessary to employ steps to check the bleeding, and thus augment the irritation. Chordee, it is true, disappears ; but we have reason to fear the most severe complications, viz., infiltration of urine and urinary fistulæ.

"7. *Induration of the Corpora Cavernosa.*—This is a disease the study of which has been much neglected. Inflammation of the mucous membrane may pass to the cavernous tissue and deposites in the areolæ of this structure plastic lymph. A true indurated knot, preventing erection, a symptom analogous to that of chordee, may arise. In fact, during erection, the corpora cavernosa may become dilated on all points except those thus indurated ; they are held there, bound down on the side of the induration, presenting a curve on this point. If the plastic knot is on the back of the corpora cavernosa, the penis during erection will present a dorsal concavity, the glans penis being turned toward the pubis. If this indurated kernal is situated at the superior part, the glans will be curved toward the perineum, and the curve will exist always on the side of the induration ; but if the whole thickness of the corpora cavernosa is implicated, that portion which is behind the plastic kernal alone becomes erect, that which is in front remains moveable and soft, like the free arm of a flail. This affection is not painful ; and it is only during erection that patients are aware of its existence ; nevertheless, it is very inconvenient. If the swelling is the result of recent inflammation, it may be treated with success, and we may be able to prevent those indurations forming ; but if the plastic organization is complete, all our remedies are useless, provided the complaint does not depend on a tertiary syphilitic affection. Induration of the corpora cavernosa is not, then, always the result of gonorrhœa ; it may depend upon other causes. All traumatic causes, such as wounds, sudden twisting of the organ during a state of turgescence, and cavernous apoplexy, coming on under the same conditions, may give rise to the complaint. We have above spoken of tertiary syphilis ; it is on this last variety that our therapeutic means have most influence." (P. 512.)

Chancre.—It is one of the complications of gonorrhœa which M. Ricord has the entire credit of discovering. Before that eminent professor commenced his investigations on the inoculation of syphilis, the distinctions between gonorrhœa and syphilis were surrounded with the greatest doubt. This is not the proper place to enter on the description ; but I may here state, for the information of the student, that until the last few years surgeons were unable to understand why some forms of gonorrhœa were followed with secondary symptoms, while others were not. The experiments of M. Ricord have now shown that in some cases of supposed simple gonorrhœa the discharge depends upon the existence of a chancre just within the meatus, and which very often can be brought into view by simply opening the lips of the meatus ; in other cases a hardness may be felt within the urethra, but the sore is too far down the canal to be visible. In a wood-cut, to be found in the second part of this work, the ulceration is shown in the deeper portions of the urethra, which have been laid open. I merely notice this important complication here : it will be fully treated of under the head of Urethral Chancre, in the subsequent part of this work, to which I must refer my readers.

Inflammation of the Prostate.—In the description of the symptoms of gonorrhœa, I gave a short account of this affection, which often becomes a very

severe complication. Its importance deserves a separate chapter, in which the whole matter will be fully discussed; and this is the more necessary, as the appropriate treatment will follow the description of the disease; for the practitioner, when consulting this work as one of reference, desires to turn to the chapter where he may find, in succeeding pages, a succinct account of the affection.

The same observation may be made on *Blennorrhagic Affections of the Eye and Testicle*; *Gonorrhœal Rheumatism*; *Spermatorrhœa*; *Impotence*; and *Strictures*.

TREATMENT OF GONORRHœA.

ABORTIVE TREATMENT.—On this subject M. Ricord says: “Provided blennorrhagia is seen at its commencement, it may, like any other inflammations, be arrested in its progress; and it is to the aggregate of these means we apply the term ‘abortive treatment.’ Supposing the abortive treatment is applied within twenty-four hours after the commencement of the disease, and in pursuance of the indications which we have already laid down, it will succeed admirably, and a want of success will depend more frequently upon the circumstances under which the plan has been employed than on the plan itself. We have already stated that, during the first few days, inflammation is seated in the balanic region: it is there it should be attacked with caustic. Nitrate of silver is of all others the most advantageous. It may be applied to the canal of the urethra by means of the *porte caustique* of M. Lallemand; but patients often object, and cauterization thus employed is not uniform. Hence I prefer recourse to injections. Injections are a valuable means, without which it will be often impossible to cure blennorrhagia. Although they have often been calumniated, far from producing strictures, as some have pretended, they prevent them. They are a prophylactic means, and not a cause; for it is with them that we cure blennorrhagia at its commencement; and we well know that the longer blennorrhagia lasts, the greater the chance of producing a stricture.

“Injections have been reproached with causing strictures, because Bell employed them in all cases without distinction; and as every case of stricture has been preceded with injections, the disease has been naturally attributed to their use.”—(*Gazette des Hôpitaux*, 1847; p. 536.)

INJECTIONS.—When a patient applies to me in the early stages of gonorrhœa, before scalding in making water has come on, or when the acute symptoms have passed, I at once employ a strong solution of nitrate of silver;* but, as

* Now that injections are, under certain restrictions, employed with so much advantage in the treatment of gonorrhœa, a few words on their introduction into practice may not be uninteresting to my readers. Ballingall states, p. 447, second edition: “It would appear, from a letter written in 1750, to the late Sir C. Hawkins by Charles Hales, surgeon to the Savoy hospital, that the use of astringent injections in gonorrhœa was at that time a practice by no means generally prevalent. This gentleman, who is a strenuous advocate for injections, says that he took the hint of using them thirty-five years before from a Mr. Green, a surgeon in Leman street, Goodman’s Fields, who was the only man that then used them, and whose practice raised much clamor and many objections and prejudices against him. Since the above period, injections have been recommended by some practitioners, and reprobated by others in terms the most unmeasured.”

The first notice that I can find of the introduction of the nitrate of silver into practice is the following from Ballingall’s Military Surgery, p. 449: “A solution of the most active of all these salts, the nitrate of silver, in the quantity of a scruple, or even half a dram, to an ounce of water, was some years ago, in consequence of some reports in favor of it, recommended by the heads of the army medical department, as deserving the consideration of regimental surgeons. How far the general reports upon this practice were favorable, or how many of the army surgeons thought themselves justified in giving a trial to it, I am unable to say.”

As, however, Sir George Ballingall does not notice if the treatment was backed with internal remedies, it is useless to extract the report from the eighty-eighth regiment, which gave an unfavorable result of the experiment tried in twenty cases.

Mr. Guthrie tells me he used strong injections in gonorrhœa in the Military hospital at Chelsea, in 1814 or ’15, and he thinks this treatment originated in consequence of the success which attended the application of solutions of the salt to ophthalmia, and that the introduction is due to army surgeons about that time.

this efficient mode of treatment may become a very dangerous agent, I always inject the solution myself. The manner in which I proceed is as follows : Having a solution of the crystallized nitrate of silver at hand, in the proportion of ten grains to the ounce, I desire my patient to make water, and, placing him in an erect position against the wall, I inject a glass syringe full (about two drams) of the solution into the urethra, and by pressure retain the fluid in contact with the mucous membrane a few seconds. It is as well, in doing this, to suddenly distract the patient's attention by some remark, otherwise the passage of the fluid along the whole length of the canal may be impeded by spasm or contraction of the organ. I then desire the patient to sit down for ten minutes or a quarter of an hour in an arm-chair, and to withstand the desire of making water, which, for the first few minutes, sometimes is very violent.*

The effect of the injection on different individuals is very striking. Some scarcely feel any pain ; others suffer for a few moments most acutely, but usually the agony goes off in three or four minutes, and is replaced by mere temporary soreness, so that the patient is able to walk about. I, however, generally recommend him to lie down on the sofa for an hour or so, and keep quiet.

The quantity of discharge, like the amount of pain, differs greatly in different individuals. Sometimes no further *discharge at all* is seen, and the patient gets perfectly well. More commonly the injection is immediately followed by a large quantity of serous or shreddy exudation, which soaks through the lint. This exudation is followed by a stringy yellow discharge. In a few hours this gradually becomes again serous, until it completely ceases, and redness of the meatus alone remains, which disappears in a few days.

Of course, considerable pain would be felt did the patient make water immediately after the injection ; but as the bladder has been previously emptied, micturition is not required, and the patient has only to combat for the first few minutes the desire to attempt it ; and many hours will elapse before urine will be required to be passed, and by that time the effects of other treatment have been brought to bear, so that scalding is seldom or ever complained of by the patient.

I have now no fear of leaving my patient, having applied a suspensory bandage, or, what answers equally well, a handkerchief passed round the loins, and another tied in front and behind to support the testes, with strict injunctions to abstain from any kind of fluid whatever, so that the urethra should enjoy a few hours' repose. On the next morning the discharge has either altogether ceased, or a drop only is to be seen, and in the course of the day a mere weeping from the urethra occurs. The patient may now take fluids in moderation, consisting of either tea or soda-water, but coffee should be strictly prohibited, as well as wine, beer, and spirits. In some cases, toward the afternoon, the discharge returns again. If this becomes green or yellowish, I have no scruple in repeating the injection, with similar precautions ; but I seldom have recourse to a third, and my patient is quit of a troublesome complaint in a very few days.

The effect of nitrate of silver in a strong solution is very surprising, as may be judged of from the previous description. It appears to possess a specific action in changing the vitality of the mucous membrane, substituting for the original inflammation a new one, whose principal characteristic is its short duration ; it destroys likewise the morbid element.

Out of the large number of cases that have been treated on this plan, I have

* It rarely happens that the linen of the patient is stained in this manner of using the salt. Should, by any accident, any of the solution fall on the linen, and produce stains, the best way of removing them is by covering the stain with tincture of iodine, allowing it to remain a few minutes, and then applying a solution of hydrosulphate of soda, one dram to a pint of water.

The surgeon, without great care, will find his hands sadly stained with caustic. I keep a strong solution of iodide of potash, and after using the injection I wash my hands with the potash, which effectually prevents the action of the caustic.

never yet seen any ill consequence arise, not even haemorrhage or retention of urine. I may mention, however, that I have never employed the treatment except in private practice, where I have had the assurance that my patient would implicitly follow my directions. I should not recommend the treatment among out-patients at public institutions, nor, in fact, have any expectation that any abortive plan will generally succeed with them, but, on the contrary, be attended with such consequences as would soon prevent a surgeon from employing the treatment in private.

I must, however, confess that this treatment has not, in my hands, been successful in the treatment of the first attack of clap in young men. In private practice a consulting surgeon does not attend, generally speaking, very young men with their first attack. Shyness, or not knowing where to apply for advice, perhaps, is the cause; but of the fact there can be no doubt, that I am comparatively rarely consulted for first attacks. When consulted, the complaint has perhaps commenced several days, and the treatment is therefore no longer efficacious. From these circumstances, I am perhaps hazarding a wrong opinion; but, speaking from my personal experience, I would not advise caustic injection to be applied in cases of first attacks. No dangerous symptoms arise with common care; but I have not met with those certain results which have attended my treatment in persons previously affected.

So great has been my success, that, with the precautions fully detailed above, I should strongly recommend the treatment in private practice, where, if it was not successful, a surgeon would be soon obliged to lay it aside, or be compelled to relinquish it, if it was found to be followed by ill consequences; otherwise, instead of giving it up, the surgeon would be given up by his patients.

My own experience does not enable me to say if direct treatment, by means of injections alone, would succeed. I am always in the habit of combining it with general remedies, the modus operandi of which I am about to describe.

Among them stands prominently forward

COPAIBA.—“ Among the substances,” says M. Ricord, “ internally administered copaiba holds the first place; it is, in fact, a specific in urethral blennorrhagia, but its specific action ceases when employed in the other forms. It may act in three ways, either by revulsion or by general or direct action on the surface which we wish to modify.”

“ 1. *Revulsive Action.*—When copaiba purges it may establish a revulsive action on the intestinal canal, and thus cure the patient, acting in the same way as colocynth or other purgatives. But we must not depend upon a cure thus obtained, for most frequently the blennorrhagia returns the moment the revulsive action ceases. As a general rule, we never ought to desire a purgative effect, when we administer copaiba.

“ 2. *General Action.*—The blood, modified by the principles of the copaiba, may act upon the mucous membrane in such a way as to contribute to the cure; but this must be very slight, as the other forms of blennorrhagia are slightly affected by the remedy.

“ 3. *Direct Anti-Blennorrhagic Action.*—Copaiba, when carried into the circulating system, may undergo elaboration, by means of which it acquires new properties. The urine of persons taking the remedy acquires a particular odor easily recognised. It is this principle contained in the urine which modifies the affected surfaces.

“ We have had occasion to treat blennorrhagia in patients who suffer under urethral fistula at two inches, or two and a half inches from the meatus. In one of these cases blennorrhagia occurred in the vesical portion of the canal, but it spread itself forward to the balanic region. The use of copaiba caused the disappearance of the discharge in that portion of the urethra situated behind the fistula, viz., that which was under the influence of the urine. But the discharge

from the anterior portion of the fistula, namely, that portion of the canal which did not come in contact with the urine, persisted. Injections caused its disappearance.

"Another patient, affected with a fistula in the same region, was able to make water by the meatus, by lowering the penis so as to bring the edges of the fistula in contact, but on raising the organ the fistula became open, and allowed the passage of all the fluid; this patient came under my care on account of a blennorrhagia, which occupied the whole length of the urethra, and without any injury to him we profited by his affection to clear up our doubts on the mode of action of copaiba. After giving him copaiba, we desired him to evacuate the whole of the urine by the fistula; at the end of some days the discharge from that portion of the canal placed behind the fistula had disappeared, but it continued in the portion in front of the fistula.

"The use of copaiba was continued, and the patient desired to allow the water to pass all along the canal, as he made water, in fact, by the meatus, the discharge from the spongy portion of the urethra disappeared like the other.

"These facts are sufficient to prove the special action of copaiba. Starting from this point, persons have attempted to cure blennorrhagia by bringing copaiba in contact with the affected mucous membranes; but the agent thus applied never succeeds, and has the inconvenience of producing much irritation. Copaiiba may be taken in three ways. 1st. By direct application, but this means of administering it has been abandoned. 2d. By means of the intestinal canal, either introduced through the mouth or by the rectum.

"*Inconveniences produced by Copaiba.*—Very frequently copaiba produces eructations as well as vomiting, which depend partly on a repugnance to the medicine, and in part on gastric irritation. Sometimes it produces diarrhoea, caused either by intolerance of the medicine or by irritation; in fact, it may give rise to interitis. Vomiting is an action unattended with any good. Diarrhoea, on the contrary, may produce benefit. Copaiba acts rarely on the nervous system, nevertheless we occasionally observe cerebral congestion, which obliges us to suspend the remedy. Taking copaiba may occasion irritation of the skin, which may produce the different exanthemata. It is principally during the autumn and the spring that these eruptions appear, and it is generally after the first doses that these exanthemata occur.

"The most common form is roseola, lichen urticaria, and sometimes urticaria. We have likewise observed exema and the different varieties of erythema, but roseola is the most common form; its appearance is preceded and followed by itching; the spots, either scattered or grouped together in certain points, are of the color of bright wine; the eruption may be general and almost instantaneous, and may be seated on any part of the body, although it occurs around the articulations, and always on the extensor muscles. It frequently arises on the side of the ear and behind the neck; it is never followed by fever unless accompanied with the condition which may of itself have produced a febrile movement. Should a surgeon have forgotten these characters, there is a pathognomonic one, namely, cure of the disease as soon as the remedy is left off. The eruption disappears from the first to the eighth day from that on which we leave off the copaiba; this circumstance alone ought to enable the surgeon to distinguish this eruption from a syphilitic one, with which it is so often confounded.

"Copaiba may, likewise, produce a symptom which has been wrongly interpreted, or rather confounded with complications of urethral blennorrhagia. Under its influence the kidneys may become the seat of lumbar pain, similar to what a blow would produce. Some surgeons have considered this as a symptom of renal blennorrhagia. This complication, which, in reality is very rare, would, under such circumstances, be much more frequent, and would be a very

grave error, although one or two days would dissipate our doubts, for by leaving off the copaiba the renal pain disappears, and we should thus cure the so-called renal blennorrhagia, merely by suspending the copaiba."—*Gazette des Hopitaux*, 1847. (P. 536.)

It is notorious that the good effects to be derived from copaiba are frustrated by the medicine being largely adulterated, particularly that prescribed in capsules; it is very difficult to detect the fraud, but it is necessary for the practitioner to be acquainted with them.

Tests for the Purity of the Balsam.—The following valuable observations on this subject, by Mr. Redwood, professor of pharmacy to the Pharmaceutical Society, deserve the attentive perusal of my readers:—

"Some observations which recently have been made at a meeting of this society, with reference to the adulteration of copaiba, especially that used for filling the cheap capsules, have induced many of our members to examine their copaiba capsules with the view of determining whether or not the contents were genuine. In these examinations the ordinary tests, mentioned in works on *Materia Medica*, have of course been resorted to, and in some instances results have been obtained indicating, according to the tests used, that the copaiba was not genuine. I have been applied to for my opinion in two or three cases of this kind, and after examining several samples of copaiba obtained from different sources, and trying the action of all the tests upon them, I have come to the conclusion that no satisfactory method, applicable in all cases, for determining the purity or impurity of this oleo-resinous substance by the application of a simple test, has hitherto been pointed out. Some of the tests which appear to have been most relied upon, I believe to be quite valueless, and I have no doubt that many samples of copaiba have been condemned as impure on very insufficient data.

"Having thus proved the worthlessness of these methods of detecting impurity in balsam of copaiba, it becomes an important question to determine whether there is any other less exceptionable method.

"The consideration of this question involves a reference to the natural history and chemical composition of the different varieties of copaiba met with in commerce. What is the substance to be tested? Is it always the same, or do different specimens of it differ in their physical and chemical characters? The answers to these questions will be found to explain the discrepancies already noticed in the action of the foregoing tests on different samples of copaiba.

"The substance called balsam of copaiba, is an oleo-resinous exudation, obtained from several species of the genus *Copaifera*, by making incisions into the trunks of the trees. It possesses most of the chemical characters of common turpentine. By distillation, or saponification, it may be resolved into a volatile oil and a hard resin. These exist in very different proportions in different samples of copaiba, depending, probably, upon the species of *Copaifera* from which it has been obtained, the soil and climate in which the trees have grown, and the length of time during which the copaiba has been kept. I have found the quantity of volatile oil to be twice as great in some samples as in others, and to this difference is chiefly to be ascribed the dissimilar action of the tests upon it. There is probably no simple test that could with any satisfaction be applied for the detection of impurities in a substance which is itself subject to such great variations in composition.

"The only method that appears to me to be at all satisfactory, of examining a sample of copaiba, with the view of estimating its purity and value as a therapeutic agent, is, first, to resolve it into its proximate constituents, and then to examine these separately, with reference to their physical and chemical characters. The volatile oil is generally considered to be the principal, if not the

only constituent of copaiba which possesses any medicinal activity. This may be separated by distilling the copaiba with water, and its physical characters are so well marked, that it is difficult to conceive an adulteration that would not be readily detected. The resin would of course be at the same time separated by the above process of distillation, and the consistence and other characters of this part of the constituents of the copaiba, will afford the best means of judging of the presence or absence of any non-volatile impurities.

"The proportion of volatile oil, in different specimens of copaiba met with in commerce, is in some cases as low as 30, in others as high as 60, per cent. The specimens No. 1 and No. 2, alluded to in the foregoing experiments, contain nearly 60 per cent. of volatile oil; they are, therefore, unusually rich in the most active constituent of the copaiba. This volatile oil has the same ultimate composition as oil of turpentine, with which it closely coincides in the action produced by the most chemical agents; but its taste, smell, and other physical characters, afford means of distinguishing it from that or any other substance with which it is likely to be mixed.

"The proportions of resin, in different specimens of copaiba, also vary to about the same extent as those of the volatile oil, the quantity being greatest where the quantity of oil is smallest, and *vice versa*. The resinous part of copaiba differs but little from common resin, obtained from turpentine. It is considered to possess but little medicinal activity, probably not more than common resin." (*Pharmaceutical Journal*, 1846, p. 13.)

No one can, in the present day, doubt that copaiba is one of the most valuable remedies we possess for the cure of gonorrhœa. Instead, however of giving it in mixture, the modern surgeon administers the balsam in capsules, and as perhaps the following short article, which I published in the "Pharmaceutical Journal" for May, 1846, may interest some of my readers, I shall here insert it.

"The best modern method of giving nauseous liquids is in the form of

"Capsules.—Of these I find no end of varieties; but I fear the majority of the makers of such useful articles have not a very clear idea of the objects sought to be attained. Need I say, that it is of the greatest importance to employ genuine copaiba! The next important point is to obtain a capsule of a certain definite size, so that we may know what dose the patient is taking, and which the surgeon is generally unable to do. Another circumstance to which the manufacturer gives but little attention, is the thickness of the capsule. I would recommend the chemist to reject all samples that are not an eighth of an inch thick. In many instances I have known the capsule burst in the effort of swallowing, or dissolve as soon as it is in the stomach. An improvement has lately been introduced, by Messrs. Evans and Leschar, by enclosing copaiba in membrane, thus obviating many of the objections to all gelatine capsules. I am told that these membranous capsules are in the hands of respectable parties, who make a point of filling them with genuine copaiba. I would suggest, however, to the patentees to increase the size and make them uniform, or the surgeon will return to the gelatine capsules, which, when properly manufactured, answer the purpose.

"The chemist should, in the selection of his capsules, take particular care that no one leaks, or the odor of the oil will be rapidly communicated to the others, and our object in giving copaiba in this way, frustrated. The patient should be told, likewise, to take his capsules after meals. By this means the gelatine, or membrane, will not immediately be acted on by the gastric juice, and those unpleasant adjuncts to copaiba, eructations, will not be experienced. Many persons will tell you they are unable to take pills, and feel convinced they will be unable to swallow capsules. Recommend such skeptics to take about a dessert-spoonful of water in their mouth, and then place the capsule on

the tongue, when the whole will be swallowed without difficulty; whereas, if the capsule be placed on the tongue, and water be taken, the patient will often swallow the water, but the capsule will remain, and produce convulsive action of the pharynx. Given in this way, it is singular how soon the medicine will act, and effect the purpose we have in view; and it is no less remarkable that the stomach becomes tolerant of the medicine; a patient has not that tell-tale face so often characteristic of one taking nauseous medicine."

During the time a patient is taking capsules, the surgeon should desire him to take moderate quantities of fluids, and to make water as seldom as possible; by this means the urine passed will contain a large proportion of the active principle of these specifics, which, passing along the canal, seem to exert their peculiar action on the mucous membrane. One or two capsules, taken three times a day, will usually suffice if these directions are followed.

In acute cases, or where the surgeon may think it necessary to employ other remedies combined with copaiba, the ingredients may be conveniently given in the form of paste, made according to the following formula:—

R. Bals. Copiae.....	3 vj.
Mag. Calcinat.....	3 iss.
Ext. Hyoscyam.....	3 ss.
Pulv. Camphoræ.....	3 j.
Theriace.....	3 iij.
Mica Panis.....	3 iss.
M. ft. Electuarium. Cap. Coch. j. Mim. ter. die.	

The copaiba appears to have that specific effect on the mucous membrane, alluded to above by M. Ricord. The magnesia neutralizes the urine, the hyoscyamus allays, or prevents, any irritation of the prostate or bladder, and the camphor checks the disposition to erections, which, without it, often become a very urgent complication, thus causing recurrence of the disease.

Paste has this additional advantage over mixtures of all kinds, that it may be taken in wafer-paper, so as completely to disguise the nauseous taste of the ingredients: as its use is by no means general, I shall here insert a short article which I wrote on the subject, in the *Pharmaceutical Journal*.

WAFER-PAPER.—This paper, according to Dr. Ure, is made in the following manner: "A certain quantity of fine flour is to be diffused through pure water, and so mixed as to leave no clotty particles. The pap is not allowed to ferment, but must be employed immediately it is mixed. For this purpose a tool is employed, consisting of two plates of iron, which come together like pincers, or a pair of tongs, leaving a small definite space betwixt them. These plates are first slightly heated, greased with butter, filled with the pap, closed, and then exposed to the heat of a charcoal fire. The iron plates being allowed to cool, on opening them the thin cake appears dry, solid, brittle, and about as thick as a playing-card."—*Ure's Dictionary of Arts* (page 1279). We meet with it in small sheets, of a light color, breaking easily when it is dry, but tenacious and moulding itself easily to the substance it covers when wet, increasing but slightly its bulk. When any powder is to be taken, it must be mixed with syrup or other tenacious substance, to the consistence of a bolus, and the patient be desired to break off as much of the paper as may be necessary to envelop the mass. The paper must be dipped in a tumbler of water, and then laid on a plate, or clean surface. The paste, in proportion of a teaspoonful, is to be placed in the centre of the moistened wafer-paper, the corners of which may be carefully folded over it; and the patient having previously taken a mouthful of water, the bolus, thus enveloped in wafer-paper, should be thrown down the throat, as the head is held a little back. It is surprising how easily patients acquire the tact of bolting these boluses, without any convulsive action of the muscles of the throat."—*Pharmaceutical Journal*, vol. v., p. 503.

I generally take the precaution of having a glass of water in my consulting-room, and with a piece of crumb of bread show my patient how easy it is to swallow large boluses thus enveloped, without nausea, and I direct the paste to be taken after meals. Some persons dislike swallowing common wafer-paper, its entire absence of taste is disagreeable; and Messrs. Bell are in the habit of scenting it by pouring a few drops of essential essence of almonds upon it, thus catering to the taste of the patient. After taking it some days, patients will occasionally complain of a pain at the pit of the stomach after swallowing it, the wafer lies there like a piece of indigestible food, and its use must be relinquished, and other means substituted; this unpleasant symptom only happens in persons of very delicate health, whose digestion is liable to be deranged by any slight causes. There are, however, others who, after taking paste for a few days, get a disgust to swallowing these wafers.

In this and the former case great benefit will be derived from desiring your patient to wash down each dose of the medicine with spruce-beer, made without ginger, and which may be procured at Quin's, in Mill street, Hanover square, or effervescent lemonade may be recommended.

CUBEBS.*—In appreciating the value of the cubeb powder, it should be stated that it yields only to copaiba in efficacy, and notwithstanding the objections that have been urged against this remedy, I consider its use of great benefit.

On the stomach, cubebs act like the pepper tribe generally, exciting that organ; its curative powers are exerted more especially on the small intestines, but, instead of producing diarrhoea like copaiba, cubebs occasion constipation; we may, therefore, be obliged to combine it with purgatives. In some cases, this powder irritates the stomach to such a degree, that gastritis ensues; the surgeon should be aware of this, and leave off administering it on the occurrence of the first symptoms. This is one of the reasons for preferring copaiba; another is, that cubebs is very liable to adulterations which are not easily detected. M. Ricord was formerly in the habit of stating in his lectures that he had met with two very serious cases where he had suspected an adulteration; the dose given did not exceed six drams, and the two patients obtained the powder from apothecaries in different parts of Paris; yet, an hour after taking the medicine, vertigo, trembling of the limbs, dilatation of the pupil, together with convulsions, occurred. In one case, erysipelas, followed by gangrene of the thigh, came on, and the patient sank in twenty-four hours. The remainder of the cubebs was analyzed, yet no adulteration could be detected; the papers, however, were not observed to be greasy, as they usually are. On the other hand, its cheapness, the fact of the stomach supporting its use, as well as the smell being less penetrating in the room in which it is kept; and, lastly, no eruptions following its employment, have made it a standard remedy; notwithstanding, I believe copaiba to be the more efficacious of the two drugs for the cure of blennorrhagia.

The usual dose is 3j of the powder to be given three times a day, in a little milk. In larger doses I have seen it produce great mischief. I believe it caused inflammation of the prostate in a gentleman who took half a pound in two days; the discharge was checked by the powder, but returned, and the prostate recovered itself very slowly.

Sir A. Cooper gives the following account of his knowledge of the value of cubebs, showing it to be of modern introduction.

* The history of the introduction of this substance into European practice, as given by Dr. Crawford, the historian of the Indian archipelago, is as follows: "An officer of the Indian army, sailing up the Ganges, contracted an inveterate gonorrhœa, and had recourse to the usual remedies without effect. One of his servants proposed the cubeb, and it was used with success. This officer communicated the fact to the surgeon serving in Java, when the disease was at that time frequent and the remedy abundant. Having been given in many instances with success, the practice was gradually disseminated on the island, and subsequently found its way into this country."—*Ballingall's Mil. Surgery*, p. 446. Second edition.

"I will now tell you how I first learned the value of this remedy : a gentleman from Java, who had lived for some time in Batavia, entered my room, and, unbuttoning his clothes, immediately showed me the part about which his mind was uneasy, and asked me whether a sore upon it was veneræal. I said, certainly not. He said he was glad to hear it, for, if it had been a chancre, he should have supposed that it had been produced by his curing a gonorrhœa very suddenly. He was running away very hastily, when I requested him to tell me how he had cured this gonorrhœa so suddenly. 'Why,' he said, 'by cubebs.' 'Cubebs?' said I, 'what is that?' for I had really at that time never heard of such a thing. 'Why,' said he, 'it is a species of Java pepper, and, if you like, I will send you a bottle of it.' I said I should be obliged to him. He accordingly sent me a small bottle of it, which I put into my desk, where it remained, without my thinking any more of the circumstance. Two or three months after, he came to me again, and said that having a severe gonorrhœa, he should be obliged to me, if I had any of the cubebs left, to let him have a little of it. This was on a Thursday : I gave him the bottle, and after examining this gonorrhœa, which was very severe, I requested him to let me see him on the following Monday. He came to me on that day, and the discharge was quite gone. This excited my attention, and I began to think that it must be a medicine of great power. Very soon after, a gentleman came to me, and said that as he was going to give a very large dinner party, and should be obliged to drink a great deal of wine, he wished to be cured of a clap immediately. I told him I could not promise to do any such thing, but, if he liked, I would give him a remedy, which a gentleman from Java had used with great success : and I then related to him the circumstance which I have just mentioned. The gentleman said he would try it, and he should prefer it to the balsam of copaiba; of which the people in his house knew the smell. He began taking two drams three times a-day, on a Tuesday, and on Wednesday week after, the discharge not having entirely disappeared, he called on me to know whether he might take wine the next day, when he was to give his dinner-party. I told him I saw no objection to it, and the effect of the wine he drank on that day, added to the cubebs, completed his cure, for the discharge did not return afterward."—*Lectures on Surgery*, p. 505.

Cubebs, however, like copaiba, should, in the present day, be given either in paste or capsules. I am in the habit of prescribing it, usually in the former mode, according to the following formula, in doses of one teaspoonful three times a day.

R.	Pulv. Cubebsæ	3 iss.
	Bals. Copaiæ	3 ss.
	Theriacæ	3 v.
	Ext. Hyoscyam.	3 ss.
	Mag. Calcinat.	3 iss.
	Pulv. Camphoræ	3 j.
M. ft.	Electuarium.	

There are two forms of cubeb capsules kept by chemists ; the one contains the balsam (consisting of the resinous and volatile principle of the berry), and I have found it a very efficient remedy, but the expense is the great drawback to their general use.

The other form of cubeb capsule contains the essential oil, and this mode of administration is found preferable to giving the nauseous powder, so disagreeable to most stomachs.

The dose given may be one capsule two or three times daily. I have not found in practice that very large doses of copaiba or cubebs are very necessary ; it appears indispensable, however, that the urine should always contain

a certain quantity of these active principles, and when recently passed it should smell strongly of these preparations.

My success in the treatment of gonorrhœa depends, I believe, in attending to all the little details above given, and which it might appear puerile to mention ; but the young surgeon, commencing practice, will soon find it to his interest to attend to these directions, for he will observe that if a patient is not rapidly cured of the complaint, all confidence is lost, and there will be no chance of compliance with the necessary restrictions to effect a cure.

INJECTIONS.—Under the use of the local and general treatment above alluded to, the discharge usually entirely ceases on the third day ; in some cases a weeping continues from the urethra, consisting not of muco-pus or pus, but of an abnormal quantity of the natural moisture which lubricates the canal, which if allowed to continue, gradually becomes more or less purulent, to obviate this, and while continuing the employment of general means, I prescribe the following injection :—

R. Zinci Sulph.			
Acid. Tannici.....	aa	gr.	ij.
Aquaæ Destill.....	3	ij.	
M. ft. Inject.			

Many surgeons think it sufficient to prescribe an injection for a patient, in the belief that he knows how to use it ; others desire their patients to press on the perinæum while employing the remedy, to prevent the fluid entering the bladder, believing that the injection will readily reach that viscus ; if, however, the experiment be tried, the surgeon will be convinced that every drop of fluid will return, and as to pressing on the perinæum, it is a useless precaution, as the injected fluid will merely come in contact with the anterior portions of the urethra. One of the causes of the difficulty in curing some discharges is, that the injected fluid can not reach the posterior part of the canal, namely, the membranous and prostate portion, so that instead of impeding the course of the fluid, we should encourage it. Another error consists in supposing that pressure in the perinæum with one hand, will prevent the fluid injected with the other, from passing. If the fluid does not pass, it will depend rather upon the want of force or proper direction of the syringe used with one hand, than to any supposed hinderance from this deep-seated pressure. If any one doubts what I assert, let him direct the first patient, who has never used an injection, to employ one with cold water ; the skeptic will then see that no fluid, or scarcely any, enters the urethra at all, as it passes out as quickly as injected in, and will prove to him that injections, as usually prescribed, are absurd, useless, and unprofitable.

Convinced then of this, I have long found it necessary to educate every patient who comes under my care for the first time, in the use of the instrument ; and this brings me to say a few words on the subject of syringes. I can not do better than extract the following letter which appeared in the "Medical Gazette," in 1841, on the subject, when I introduced to the notice of the Medico-Chirurgical Society, a syringe, which is now to be found in every chemist's shop in London, so preferable is it found to all others.

" In my work on Venereal Diseases I recommended, in the early as well as in the later stages of gonorrhœa, a solution of nitrate of silver to be thrown into the urethra by means of a glass syringe. I frequently, however, am at a loss to procure glass instruments, as they are not generally kept by chemists ; and I find, moreover, that those in present use fail in the purpose we have in view.

" When I order a glass syringe, my patients are sometimes served with a thin glass tube, having a wooden piston ; the extremity of the instrument is drawn to a fine point. In other instances they procure the more expensive

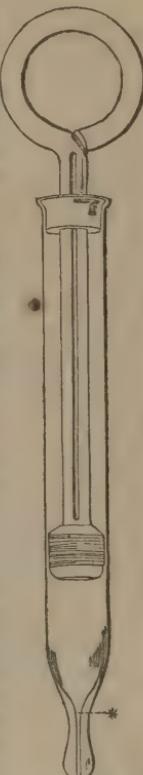
syringe, made of a glass tube tipped with ivory, the piston of metal; and this has likewise a conical-shaped extremity. The price of this instrument (4s. 6d.) places it beyond the reach of many of our poorer patients, and it is, moreover, liable to many objections: by employing nitrate of silver, these instruments become dirty, and are cleaned with difficulty, the ivory becoming discolored and the metal piston corroding. Patients observe this; and more than one has objected to continue the use of an acid (as they call it) which produces such effects on metal. On the other hand, the surgeon will justly object to the introduction of all pointed or conical-shaped syringes into the urethra, as very liable to irritate the membrane; and, unless properly introduced, the point will often be pressed against the side of the canal, and the fluid will not escape. Lastly, it is almost impossible to press the canal against a conical-shaped instrument, so as to prevent the escape of the fluid.

"The tube, as well as piston, of the instrument I make use of, is made of thick glass to prevent all chance of breaking, unless it fall from a considerable height. The cylinder is made as true as possible, and instead of terminating in a conical extremity, the canal is carried the distance of half an inch (as marked in the woodcut with *) through the bulb of solid glass. By this simple contrivance the fluid is forced, with additional power, out of the instrument, and the stream does not become so soon divided. The advantages of a bulb will be at once apparent; the patient runs no risk of wounding the inflamed urethra, and a free passage is always insured to the fluid, although the instrument be not introduced exactly parallel with the direction of the canal. Pressure can be readily and effectually made on the extremity of this syringe, so as to prevent even a drop of fluid from escaping, until the patient desires it. The bulb may be made of various sizes, according to the object we have in view; I generally prefer it of the diameter of the blunt extremity of a goose-quill, as I find it will then readily enter into the urethra of persons who contract gonorrhœa; for, as I have stated, one of the predisposing cause of that complaint is a large meatus urinarius.

"It is not, however, alone necessary for the surgeon to recommend this or that form of syringe. If he expects to cure his patient, he must educate him in the use of it; and the following remarks may not be without their practical advantage to the young surgeon. Let the patient, when standing up, introduce the bulb of the charged syringe, held in the right hand, a quarter of an inch into the urethra, and compress it moderately in the circle formed by bringing the point of the index finger of the left hand to the second joint of the thumb, or by pressing the canal against the syringe by the thumb and forefinger of the left hand; then, by forcing the piston down quickly, the fluid will readily enter the urethra, and not return until the pressure is withdrawn, when the *whole* of it will escape. By these means I have cured some very rebellious cases, where others, I believe, had failed, simply from a non-attendance to directions which may appear futile to many who are not acquainted with the obstinacy of gleets."

—*Medical Gazette*, vol. i., 1841, p. 429.

I desire the patient to practise the use of the syringe, employing a little cold water, and when perfect I desire him to employ one syringe full of the zinc-wash night and morning. As soon, however, as the discharge has disappeared, I by degrees discontinue the injection, lest it might irritate the canal, and gradually leave off the general treatment, forbidding, however, the use of malt-liquors, spirits, or coffee, and enjoining strict continence for some time,



and ten days subsequently allow my patient to return to his ordinary mode of living. If in spite of these precautions the discharge returns, recourse must be had to the strong injections of nitrate of silver, or the patient may use a weaker solution of two grains to the ounce on two alternate nights, or lead and zinc may be employed.

Relapses of Gonorrhœa.—The return of discharge usually can be traced to the indiscretions of a patient, and inattention to the directions of a surgeon; but in some few instances it is difficult to arrive at the cause. A patient strictly attends to the advice given him, yet suddenly the discharge assumes a purulent character. Sometimes this follows nocturnal emissions, a long walk, or violent exercise; in other instances the redness of the orifice of the meatus has always been present, and, on examining the urine, a large quantity of mucus is observed in the liquid, and those thready portions alluded to at page 22, are seen floating about in it, although no discharge is to be recognised at the orifice at any portion of the day.

Under such circumstances as these, there is reason to believe that the affection lingers at the posterior portion of the canal, where our remedies are less efficacious; but in such cases I always repeat the injection with nitrate of silver and continue the paste, but await the result with much less hope; for it must be acknowledged that our remedies have less efficacy when we are called on to treat a sub-acute inflammation of structures, not only situated a long distance from the external orifice, but diverging into all the little ramifications of ducts with which the urethra and its appendages are so freely supplied. In addition to this, we have to treat often a peculiarly irritable class of persons, who have never, perhaps, laid by a day, and who are very impatient of restraint, particularly as their complaint gives them but little inconvenience, further than the discharge which it produces. And this brings me to speak of the—

CURATIVE TREATMENT (RICORD'S PLAN),

which we must now lay aside. As practitioners will necessarily be anxious to learn all that is known on this subject, I shall first quote a portion of a lecture by M. Ricord, in the "Gazette des Hopitaux," page 592, for 1847, and afterward state the treatment which I myself have found most efficacious in private practice :—

"If I am asked if the abortive treatment always succeeds, I answer, no; it moreover sometimes produces severe accidents, inflammation or gastro-intestinal irritation, and eruptions on the skin. In such instances we should pause, and treat the complications before they assume a severe character. Supposing the remedy is tolerated by the stomach, it by no means follows that it should produce the effect we desire; and if, notwithstanding its inefficiency, we continue to employ the remedy, the complaint will often progress and assume an inflammatory character, and the disagreeable taste is the only noticeable effect of the remedy; moreover, the patients will not take it from disgust, at a later period, when its effects might have been beneficial.

"In these cases we should change the treatment, prescribe demulcents, desire the patients to make water frequently, enjoin tepid baths—for if taken very warm they produce congestion in the vessels of the urethra.

"The bowels should be kept open, for constipation is among the causes of inflammation of the prostate and testicle, as well as of the vesiculæ seminales: for this purpose I employ saline purgatives or castor-oil. If in spite of these means inflammation increases, antiphlogistic means should be employed. Local bleeding in the inguinal region, if the inflammation has not extended beyond the glans penis; or leeches in the perineum, if it has reached the posterior portion of the canal. Leeches never ought to be placed on the penis; you

are aware of the inconveniences following that practice. If blennorrhagia causes febrile reaction, we may have recourse to bleeding from the arm. The antiphlogistic regimen will sometimes alone effect a cure; but these cases are very rare. In general, when the disease is on the decline, the remedies should be changed, if we would not have the gleety complaint come on. It is in these cases that the balsams are indicated.

"In some very rare instances, in which the antiphlogistic remedies have been unable to produce relief, copaiba and cubeb have been known to check the inflammation, particularly when given in large doses. The treatment may be tried, provided emollient applications have failed.

"The balsams have been administered by the rectum; their action is, however, less evident, and they ought never to be thus prescribed, unless the stomach be unable to bear them. The following is the formula which may be prescribed:—

R. Copaiæ	3 v.
Vitelli Ovi	No. 1.
Decoc. Papaveris	3 ij.
M. ft. enema.	

"The patient should be desired to empty the intestine by a cold-water enema before throwing up this remedy, and to retain the copaiba as long as possible, which it is not always easy to do, although this may be assisted by adding a few drops of laudanum to the enema. Frequently the intestine will not bear the injection until three or four have been employed. M. Ratier recommends capsules to be passed into the rectum—a plan which may be advantageous.

"Before quitting the anti-blennorrhagic remedies, let us stop and consider for a moment the treatment of the accidents which may complicate the acute period of the disease.

"1. *Erections.*—These should be treated with antiphlogistics; but they are relieved sometimes by camphor, taken either in the form of enema or in pills.

R. Pulv. Camphoræ	gr. viij.
Vitelli Ovi	No. 1.
Mist. Amygdalæ	3 j.
M. ft. enema.	
R. Pulv. Camphoræ	
Ext. Lactucæ	aa 3 ij.
M. ft. pil. xx.	
Cap. iv. vel. vj. Omni nocte.	

"Let the patient avoid feather-beds, and only employ sufficient bed-clothing to prevent being chilly. The surgeon should be aware that camphor fails of its effects in certain persons.

"2. *Retention of Urine.*—It frequently happens that an obstruction takes place to the passage of urine in some limited point of the membranous, spongy, or prostatic region of the urethra. As long as the impediment is slight, the surgeon should be careful how he introduces instruments, and antiphlogistic remedies should be employed, as well as emollient applications; baths, however, are not always useful. But if complete retention has existed some time, if it resists antiphlogistic remedies, and if the bladder become distended with a large quantity of urine, the case becomes serious, and it should be drawn off by instruments. The structures traversed by the instrument are soft, inflamed, and easily torn; deprived of their elasticity, they should be handled very gently, and a gum-elastic or metallic catheter should be employed. The rapid passage of an instrument may occasion a false passage.

"When the catheter has reached the bladder, the water should be drawn off,

and if not held tight the instrument may be withdrawn, and antiphlogistic remedies freely employed; but if, on the contrary, the introduction of the instrument is attended with difficulty, and if the instrument is embraced firmly by the walls of the canal, the catheter should be left in, for the surgeon can never be certain of introducing it a second time, if he withdraws it. It is true he runs the risk of producing much inflammation, as well as occasionally abscesses on the outside of the urethra; but still the patient is sure of being able to pass his urine.

"The instrument must be left until it is no longer held tightly. In case you are unable to pass a common catheter, the surgeon must have recourse to puncture of the bladder, or forced catheterism, but we can not here dwell on these operations.

"3. *Urethral Hæmorrhage* may be caused by erection in chordee, the introduction of catheters, and by rupture of blows on the urethra. We generally succeed in curing it by cold applications, or by causing the patient to sit on a strong roller of linen applied to the perinæum; sometimes cold injections succeed. If the hæmorrhage does not cease, we may introduce a sound into the urethra, in order to exert pressure upon the tissues which give rise to the hæmorrhage. And when the rupture has taken place in front of the scrotum, we may add a circular bandage, which has the advantage of compressing the tissues against the instrument. Be careful, however, to watch such a case, for compression thus employed is not unattended with danger. If you have reason to believe that hæmorrhage comes on from exhalation from the vessels, you may employ the ergot of rye.

"4. *Inflammation of the Neck of the Bladder*.—We will not recur to the symptoms of this accident, as we have already detailed them. The treatment should consist, for the most part, in antiphlogistic, laxative, and sedative remedies. But sometimes, nevertheless, these means fail; tenesmus, and a great desire to make water, come on. In such a case, cauterization with Lallemande's instrument should be tried. Quotidien intermittent fever is also one of the complications which accompany this complaint, and the same means which relieve the former disease, will cure the fever. If, however, it takes a tertian form, or if it becomes but a complication, we must have recourse to the treatment of intermittent fever.

"5. *Abscesses*.—These should be opened at the commencement when easily accessible, for it is better to be a little too early than a little too late; but in opening them, the patient should be warned of the consequences, for they are too often disposed to attribute to the means we use, the result which depends upon the disease itself. It is important then to tell them, that in spite of this external opening the surgeon makes, the pus may find its way into the canal of the urethra, and produce fistula. Whatever the condition of the abscess, you should protect the urethra in giving an outlet to the pus. Abscess in the prostate, according to the position it may be placed in, may point toward the urethra, perinæum, or rectum; in either of the last cases it should be opened as soon as fluctuation can be detected. If the abscess points in the direction of the urethra, the surgeon often opens it by the introduction of catheters."

"Treatment of *Blennorrhagia* when the Disease is on the Decline.—After the acute stage has passed, the inflammatory symptoms subside. The patient no longer complains of pain in making water, but the discharge persists. It is in such cases that we must have recourse to the anti-blennorrhagic remedies. During the time our patient is taking these medicines, we should leave off baths, diminish the quantity of fluids, and prescribe quiet and the use of a suspensory bandage. The neglect of these precautions will considerably interfere with the success of our treatment. Cubeb and copaiba should be given for the same reasons, and under the same forms and doses spoken of under the head

of abortive treatment. Injections should be reserved for a later period. The internal anti-blennorrhagic remedies sometimes suffice for the radical cure of the urethral blennorrhagia; nevertheless, if the cure does not at once take place, it is necessary to employ local means. These means are unattended with any inconvenience, when all pain and scalding has ceased, and erections cease to be painful. At the declining period of the complaint, nitrate of silver in strong solution may be employed, and in such cases the inconveniences which might present themselves are very easy to overcome. We, however, prefer the following injection:—

R. Zinci. Sulph.	
Plumbi Acet.	ææ gr. xv.
Aqua Rosæ.	3vj.
M. ft. Inject.	

“Desire the patient to inject the urethra three times a day with the above, having previously shaken the bottle. The acetate of lead may be left out, thus making the injection much more simple. Fifteen drops of laudanum may be added. The acetate of lead may be used alone, or the nitrate of silver in feeble doses, that is, one grain and a half to six ounces of water. Hunter injected a solution of one grain of corrosive sublimate to six ounces of water. The first effect of the injection is to augment the discharge, which soon stops altogether, or it may return to its former condition; in the last case the injection must be repeated. This treatment must be continued for eight or ten days after the cure; the injections should be suspended first, rather than the balsams.

“*Chronic Stage.*—When the discharge has become chronic, it is important to discover whether it may not be kept up by some alteration in the urethra. If we have discovered that no such lesion exists, the treatment may be continued without fear, but less active. We employ with success pills of Venice turpentine, or prescribe tar-watér, the infusion of spruce fir, or uva ursi, which may be sweetened with either of the following syrups:—

R. Syr. Tolutani	3xvj
Catechu.	3ij
R. Syr. Tolutani.	3xvj
Ferri Citratis.	3ij. ad 3iv.
M. ft. Syr.	

“It is not uncommon to see these chronic discharges disappear under the use of this remedy, but the diet should be strengthening without producing excitement. Cold sea-baths may be prescribed, due regard being paid to the susceptibility of the patient. Sometimes the disease resists all the means above spoken of, and the patient is disgusted with all sorts of physic. In such a case, nitrate of silver in a strong solution may be employed, as well as in small quantities. Tonic or astringent substances, such as Bordeaux wine, tannin, and rhatany, have been employed with success. Creosote has been given internally and applied externally, as well as the iodide of iron in injections. If the discharge still exists, bougies should be introduced, which may be smeared with astringent ointments, composed of alum and nitrate of silver. We have been obliged occasionally to cauterize the affected surfaces by means of Lallemande's instrument. If this means fails, a blister may be placed on the pubis, groin, or on the perineum, but never on the penis. Some obstinate discharges will disappear by moderate sexual intercourse.

“Chronic discharges resist in certain cases all the therapeutic means we possess, and the cause is attributed to a condition of constitution very difficult to modify, such as the lymphatic temperament, scrofula, tubercles in the urethra, prostate, or bladder, herpetic eruptions, or rheumatism. These causes alone may keep up blennorrhagia, and it is very necessary to remove them, or if that

be impossible, to modify them by the therapeutic means proper for each of these diseases. Secondary or tertiary symptoms are rarely found as complications in producing blennorrhagia, but it is necessary to know that this is possible. The most frequent cause of chronic discharge is undoubtedly organic lesions of the tissue of the urethra, changes of structure which in themselves are caused by blennorrhagia. Their study would lead us to the history of stricture, which we could not discuss here without losing sight of the system we have adopted."—*Gazette des Hopitaux*, 1847, p. 635.

I have given entire the lecture of M. Ricord, in which he so ably describes the course and curative treatment of gonorrhœa, but at once I would wish to state that the results of gonorrhœa there described, such as an affection of the prostate, abscess, &c., rarely follow the abortive treatment; any one prejudiced against the treatment would undoubtedly find in this lecture ample evidence that recourse to the abortive treatment is not without danger, and so it is, as the professor of the Hôpital du Midi candidly admits, but not to the extent that a person cursorily reading the lecture might suppose. The student must recollect that when treating on any given subject, a lecturer or writer must condense his matter, and describe under certain heads the diseases which are not always, nor in the majority of cases, caused by the affection under which the description is found, and yet from the plan followed, the disease will find place there. In the present instance, the abortive treatment occasionally aggravates symptoms, which perhaps without its employment would not have run so high, and M. Ricord finds it convenient under the head of *curative treatment*, to describe the affection of the prostate, abscess, &c.; but let the student at the same time recollect that all these symptoms as well as others still more severe, come on when no abortive treatment has been pursued. Can any unprejudiced person state the cause? I may, without vanity perhaps say, that during the last eight years I have had very extensive opportunities of judging of this treatment, and I can conscientiously state, that out of the large number of cases treated in private by the abortive plan, I have had only two cases that mischief could be said to have arisen from the remedies, whereas I have had numbers of equally severe cases which have occurred in patients that have been under the hands of others who have followed the palliative treatment, and have been fearful of using injections, or aught else than toast and water, or some harmless saline medicine. Let the young surgeon be assured, that no one enjoying a position in London, would dare to employ long any treatment, which in the majority of cases would induce accidents, such as inflammation of the prostate or bladder. Large as London is, a man's reputation is soon marred, if any number of mismanaged cases, can be brought against him, and he be unsuccessful or ignorant, he becomes a doomed man, deserted by his patients, and ceases to be consulted by his profession.

I have made these observations, because in a criticism on the former edition of this work in the Medico-Chirurgical Review, the opportunity was taken to make the following remarks on a paragraph headed, "Is the speedy suppression of gonorrhœa safe?"

"It is odd enough that this very day a practical comment on this doctrine came before us. A gentleman whom we had treated for a gonorrhœa two or three years ago, and that with safety and success, applied to us under these circumstances. Last year he went to Paris, and caught a gonorrhœa there. He went immediately to M. R.—, who gave him very powerful doses of capivi and cubebs, and strong injections. He felt, he said, all on fire with the medicines. The gonorrhœa was stopped in a week, but from that time to this he has been subject to severe headaches, his digestive organs have been totally deranged, and a stricture soon supervened. We have no hesitation in expressing our dissent from the doctrine that M. Ricord has laid down."—*Medical Chirurgical Review*, 1841, p. 29.

As this paragraph was probably written by one now bowed down by disease, I shall not further notice it than by advising the young surgeon to be cautious, how he ventures to reject a plan of treatment, because one case turns out unsuccessfully, or asserts that this or that treatment was the cause. The case here detailed is a singular one, and doubtless presented some peculiarity not noticed, especially as in private practice M. Ricord is not in the habit of giving large doses of cubeb or copaiba, and I have yet to see an instance where stricture was caused by the remedy given, particularly when that remedy stopped the gonorrhœa. Experience has convinced me of the difficulty of removing early prejudices, or altering a line of treatment that habit has made familiar to the surgeon.

AUTHOR'S TREATMENT OF ACUTE AND SUBACUTE GONORRHœA.

When a patient consults me, and the inflammatory stage has set in, or when the abortive treatment has been tried and failed in curing the discharge, we must relinquish all hope of cutting short the complaint, and employ the usual antiphlogistic remedies; for the time being, specifics cease to exert their influence, and had better not be employed. In private practice, however, recourse should not at once be had to leeches, if the inflammation is not very severe; rest in the horizontal position, warm-baths, fomentations, low diet, antimony in small doses, henbane, and opiate enemata, with light clothing at night, and that mildest form of aperient medicine, castor oil, will usually suffice to check the inflammatory character of disease. Of course urgent symptoms should be treated by leeches, but their application is always attended with inconvenience, and when the inflammation is deep seated, their advantage is very temporary; when you decide on using them, they should be applied to the perineum or groins, and in sufficient quantities to have some influence on the disease. As a general rule, never employ less than a dozen and a half, and encourage the bleeding; a few irritate without unloading the vessels.

If a rational plan of general and local treatment is followed, the symptoms subside in a few days; but there are irritable constitutions which give us great trouble. During the last year I have had two such cases; one occurred in a medical man. The sub-acute symptoms continued in spite of all my own and others' endeavors to stop them, and time alone seemed to benefit my patient, as he gradually got well; but I am induced to think that he was reduced too low at first, as the cure was effected under a tonic treatment carefully arranged. These irritable persons will hardly bear either a depleting or stimulating plan; they are a class by themselves. The inflammatory symptoms do not run high, but persist in a most annoying way. Bearing these hints in mind, the young surgeon should treat such patients very cautiously.

I have lately had a case under my care showing the difficulties a surgeon meets with in actual practice. A barrister who had been in a very delicate state of health for some months, contracted gonorrhœa. His stomach would not bear copaiba or cubeb; a state of depression when they were given came on that was unbearable; enemata containing these preparations were tried, but irritability of the rectum obliged me to leave them off; injections could not be borne by the urethra, and time and attention to diet alone succeeded in ultimately curing this patient.

As soon as the sub-acute inflammatory symptoms have subsided, I commence or recommence the specifics, either cubeb or copaiba, given in the form above alluded to, and have no hesitation in resorting, as soon as the discharge is a little checked, to astringent injections, watching them carefully; and on the reappearance of inflammatory symptoms I of course leave them off. But I hardly remember an instance in which I have been obliged to omit them on this account.

SECTION III.

CHRONIC GONORRHœA OR GLEET.

DEFINITION.—A slight discharge from the urethra of a serous, mucous, or muco-purulent character, unattended with scalding or pain in making water. In some instances the lips of the meatus will be found glued together, and a drop of yellowish fluid may be pressed out. This appearance is sometimes seen only in the morning: occasionally there is a constant weeping from the urethra. The patient's linen may be without stains for days, as long as he leads a regular life; but let him indulge in wine or take exercise, and at once the symptoms return, and may continue for months.

Patients attach no very definite meaning to the term: with them, every discharge from the urethra, if it has existed some time, is "gleet." Thus you have seminal emissions called gleet. Impotence is often styled gleet; stricture is thus misnamed; irritable urethra comes under this denomination; some dreaded but invisible disease often goes under this general term; and, lastly, patients truly enough characterize as gleet chronic discharges, the sequelæ of gonorrhœa, which more properly form the subject of this chapter.

SYNONYMOUS TERMS.—The French usually call this affection "chronic blennorrhagia," and in common parlance they use the term "goutte militaire," as if it were more common in the army than in any other service.

SYMPTOMS.—In many instances the symptoms attending gleet are merely those which remain after the severer ones of gonorrhœa have subsided, and the chronic stage has commenced. This is known by a diminution of the scalding in making water; the discharge, which was previously purulent, becomes mucous, although it continues abundant; in other cases none is observed during the day, but in the morning the lips of the meatus are found glued together, and a very small quantity of discharge escapes; on the linen a stain is left like that of gum; in some persons no other traces of discharge can be found than various mucous flocculi (their nature is explained in the following page), resembling little pieces of vermicelli, to be met with when a patient makes water in a clean glass, and which are not secreted in sufficient abundance to form a drop, but which are washed away from the mucous membrane as the urine passes along.

I have sent a great many specimens of these discharges to my friend Dr. J. W. Griffith, who has so ably written on urinary deposites; and he has kindly favored me with the following description:—

"These, when examined microscopically, are seen to consist of amorphous granular shreds of mucus, with pus-corpuscles and epithelium scales. The epithelium is generally of the pavement kind, that modification of it which lines the bladder. Hence their source is probably the mucous membrane of the bladder.* The mucous flocculi above mentioned must not be confounded with the apparent shreds formed by the adhesion of pus-corpuscles and epithelium scales to hairs or cotton fibres, such as are not uncommon in uriné. The former may be found in urine the moment after it is passed."

When my attention was first called to the above appearances, I entertained the hope that the microscope would have enabled the practical surgeon to say from what part of the canal the secretion came; but this has not been realized, as frequently pus, mucus, and epithelial scales, coming from the different portions of the canal, are found mixed together: still, when the one or the other

* "In some cases I have seen small, flattish, ciliated epithelium scales contained in them. I am not aware that ciliated epithelium has yet been detected as a constituent of any portion of the human urinary or genital tract. It probably arises from either the sinus prostaticus, prostatic ducts, or the kidneys near the malpighian bodies."

predominates, a rational diagnosis of the situation of the lesion may be made. However, in practice, the treatment will differ little, and this is very fortunate, as the surgeon can take so little advantage of the distinctions the microscope points out.

HISTORY AND COURSE OF THE DISEASE.—A patient who has contracted gonorrhœa allows the complaint to progress, or leads an irregular life during treatment; the discharge continues in spite of remedies, which are persevered in or not as the case may be. At length the disease abates, but an habitual gleet remains, aggravated by violent exercise, wine, or other exciting cause, but which again subsides to an habitual gleet on resorting to a quiet mode of living. The patient often complains of a tickling or itching along the course of the urethra, or this may be confined to a particular spot. Thus months, or even years, may pass, and the patient remain in *statu quo*. Treatment with the usual category of cubeb, copaiba, iron, &c., relieve the gleet for the moment, but it returns again and again under slight causes, to the annoyance of the patient and the discredit of the surgeon, and yet neither one nor the other may have any suspicion of the true nature of the complaint.

At an early period of private practice my particular attention was called to these cases, which presented little in common except the obstinacy of the discharge, and the difficulty of cure; yet at times anything and everything, such as drinking to excess, or passing bougies, armed or simple, might cause its disappearance, and I began to suspect that in the early stages of gleet the surgeon should rather prevent stricture than attempt to cure the gleet. Entertaining these opinions, I urged my patients who had long labored under urethral discharges to allow me to pass an instrument, and I soon found that in the majority of the cases there was disease of the urethral canal more than sufficient to account for the persistence of the complaint: and this brings me to consider the

PATHOLOGY OF THE COMPLAINT.—In the old writers it was a very prevalent notion that gonorrhœa depended upon ulcers in the canal; but Hunter and Cooper have since proved, by dissection of criminals hung during the time they were suffering from gonorrhœa, that no such ulcers were present in the canal, and that mere redness of the mucous membrane existed. Little attention has since been given to the subject, and the condition of the urethra in these chronic cases of gleet has been barely studied except in cases of permanent stricture. Our information is derived principally from the works of Sir C. Bell, whose observations on this subject are so complete, that little has been left to subsequent observers. Not so, however, in cases of chronic affections; death seldom occurs in these instances; and as the urethra is a part rarely examined, except in well-recognised cases of stricture, it is not surprising that we possess no specimens to illustrate the subject.

In my own practice I have never been able to obtain a morbid specimen of the disease I am about to describe; but anatomy teaches me that, in analogous membranes, similar changes take place, and my description must be derived from the sensations felt by the patient and the surgeon. If an instrument, say a No. 8 or 10 catheter or bougie, be used in the case of a patient suffering as I have described above, the surgeon will usually find one or more irritable points which are often excessively sensitive; in some instances the surface feels irregular, but no swelling or thickening of the canal can be detected by the finger from the outside. In many instances (and these are in cases where the gleet has existed some time) the instrument detects considerable contraction of the parietes of the canal, which may prevent the further progress of the bougie; considerable pain is often felt when the bougie passes over the irritable surface, which extends sometimes an inch or more down the canal. Frequently we find two or more such patches following one another at intervals of half an inch,

the mucous membrane in the intervening spaces being perfectly sound. When the instrument has passed, the pain usually ceases, but on withdrawing it a few drops of blood often follow, and the first time a patient makes water some pain and scalding are present, and he is often sensible of a distinct sore place (as he expresses it), which can be pointed out with the finger. Should the same instrument be again passed in a few days, it will be attended with less pain, and traverse the irritable portion more easily, and a larger size may be substituted, when the same phenomena will recur. It might be supposed that the discharge from the urethra would increase, but such is not usually the case: on the contrary, it gradually diminishes until it entirely ceases; but this does not occur until the largest-sized instrument shows that the normal calibre of the canal is restored.

In the absence of post-mortem examination of these cases, it would be very difficult to characterize the peculiar cause of the obstruction. The sensations felt by the surgeon show that the affection does not depend upon plastic lymph, effused underneath the mucous membrane, for if this were the case the cause would be perceptible, as the complaint usually occurs in the pendulous portion of the urethra. When the instrument is being introduced, the surgeon experiences the sensation of the bougie passing over soft granular bodies; and my belief is that the urethra presents detached patches of fungous granulations, the result of chronic inflammation. In the female the speculum has shown that in old standing discharges the walls of the vagina may become converted into a granular condition. We are likewise aware that a similar condition of the palpebrae exists which is called granular conjunctivitis. Now, I ask, may we not have a similar affection of the urethra, characterized as above described, and giving rise to the symptoms which betoken gleet, and which is uninfluenced by the specifics usually given?

The course of the disease is, I believe, to continue in this granular irritable state for some time, unless proper treatment be resorted to. The granular condition, I believe, may disappear of itself, and effusion take place into the cellular tissues around the canal, giving rise to that form of permanent stricture alluded to at page 88.

I have previously stated that our standard authors have nearly omitted all mention of the form of stricture I am describing, and in others, allusion can be only found to a complaint which, in my opinion, is the most common commencement, and lays the foundation of the most numerous strictures met with in practice. Thus Bell, in describing the varieties of strictures, says, "This sort of *callosity** of the canal differs from the more common strictures in this, that in consequence of the spongy body which surrounds the canal of the urethra often partaking of the effect of the inflammation, the cells are obliterated, and what was loose, spongy, and dilatable has become *condensed and rigid*. This undilatable condition of the urethra, when examined by the bougie or probe, gives the sensation of great irregularity; the point is interrupted, and feels as if it were moving over eminences on alternate sides of the canal."—Bell, p. 20.

Again, under the head of *Dilatable Stricture*, at pages 54 and 55, Bell alludes probably to a form of this stricture, but speaks of it principally as a complication caused by inflammation, or permanent, rigid, or firm stricture, in passages too long to quote here. Sir C. Bell, however, was, I suspect, only consulted about these cases when the popular and palpable symptoms of stricture had fully presented themselves. I hope, then, I have said enough to convince my readers that others have noticed these appearances, although they have not drawn the same conclusions as myself, and I therefore pass on to the consideration of

The *Cause* of this condition of mucous membrane, which is doubtless chronic

* These words are not underlined in the original, as marking a distinction which I propose.

inflammation, that has not subsided after gonorrhœa. Patients will tell you that they have had an habitual gleet, and that remedies have been tried ineffectually. Copaiba and the usual anti-blennorrhagic medicines have been given in vain, or with only temporary effect on the complaint, which recurs on the least excitement.

Contagion.—It has been generally admitted, that as long as a gleet consists merely of a serous or milky discharge, it can not be communicated to a healthy female, but that if it be purulent the disease may become contagious. I should never advise a patient to run the risk of communicating the disease; for who will say that a discharge assuming a milky character will not become purulent after connection? Fortunately, however, for women, the parts of the vagina coming in contact with the secretion are lubricated usually with secretion, which prevents the otherwise contagious matter from coming in contact with the mucous membrane, did not this occur much more mischief would arise than happens, for I should scarcely be believed, did I mention the number of cases of gleet which have come under my notice, where connection has not been followed by contagion. After a patient has long suffered under gleet, many a medical man has sanctioned marriage, and oddly enough, neither the gleet has increased, nor has the female suffered; but, although I have witnessed such instances, I never would sanction this practice, nor would I advise any young surgeon to follow it.

This brings me to consider contagion in another point of view. It occasionally happens that a married man no sooner gets well of a gleet than, on returning to his wife, he finds the complaint recur with its former severity. In these instances an examination of the female will detect her suffering from the *whites*, which will produce a chronic discharge in the husband, or he may have communicated a gleet to his wife, which, if not cured, will infect him again and again. Let the surgeon bear this in mind, otherwise he may believe himself unable to cure a patient, when, on the contrary, the patient is cured, but relapses occur in consequence of contagion from a source that is not usually suspected, but the possibility of which, in practice, should always be borne in mind.

TREATMENT.—My readers may infer, from the description above given of the symptoms and pathology, what line of treatment should be followed in gleet, a complaint which has almost been considered incurable, simply, because the proper indications have not been followed. When a patient, suffering under old standing gleet, presents himself, I do not lose time in trying over again the thousand and one popular remedies, but employ a wax bougie No. 6 or 8, to test the condition of the passage; usually a more or less irritable surface is felt, in other instances, there is incipient stricture. If the instrument detects an irritable unequal surface, I inject the urethra with a strong solution of silver, in the manner and with the precautions which have been fully described under the treatment of gonorrhœa; and, together with this, I order capsules, or cubeb and copaiba paste, to be taken in wafer-paper, a treatment which has been fully described in Section II., page 69; occasionally it is necessary to repeat the injection of nitrate of silver, but most frequently, as soon as the discharge has abated, the use of an astringent injection, composed of two grains of sulphate of zinc, and two of tannic acid, to two ounces of water, will suffice in a few days to completely cure the most intractable cases of gleet.

In some instances the copaiba or cubeps may in a few days be replaced by some of the preparations of iron, particularly in delicate fair habits, for steel seldom benefits the dark-haired; in these, cubeps and copaiba act most efficiently, particularly when followed up by sea-bathing and change of air.

In patients where the instrument detects incipient stricture, injections with nitrate of silver are no longer advisable; here the greatest benefit will be de-

rived from passing a bougie every other day, and in the intervals employing the astringent injection above spoken of, properly introduced, so that the tonic wash should come in contact with the whole canal. The benefits of the combination of the two agents, dilatation and injection, are very soon apparent; if much contraction be present the introduction of the bougie for some time may be persisted in, but on the disappearance of the discharge the injection may be discontinued; this is another instance added to many, I have furnished, of injections curing rather than producing strictures, particularly when caused by chronic inflammation of the mucous membrane, and shows the importance of a perfect knowledge of the pathology of the canal and its appendages.

In the majority of cases the urethra of a person laboring under gleet, will bear a great deal of rough handling; it has become very insusceptible to inflammatory attacks, but exceptional cases every now and then arise, showing the opposite extreme; such patients can not bear a second application of the bougie, nor can they bear injections, which increase the discharge; in these exceptional cases all stimulating treatment must be left off, and opiate enemata employed, together with hyoscyamus and warm baths, patience and change of air will do much more than physic; when the irritability has passed, recourse may be again had to dilatation or astringents, but sooner or later stricture will arise, and this, if not attended to, gives rise to one of the most puzzling and difficult cases we meet with in practice, and the young surgeon will be too glad to share the responsibility with some one else.

SECTION IV.

STRICTURES.

A NOT unsrequent consequence of gonorrhœa is stricture, to the consideration of which subject we now call the reader's particular attention.

DEFINITION.—In the following pages I shall consider the term stricture as a diminution of the natural calibre of the urethra.

CLASSIFICATION.—Authors who have written on the subject of strictures, differ among themselves on the classification of this disease. Sir B. Brodie speaks in his work of two kinds—*spasmodic* and *permanent stricture*.

Sir A. Cooper, in his Lectures, says, “ Strictures of the urethra are of three kinds—the *permanent*, the *spasmodic*, and the *inflammatory*.”

My own observations lead me to believe that these different forms may occasionally be met with separately, but that they most frequently complicate one another; as, however, they may be best described *seriatim*, I shall follow this plan, and commence with

SPASMODIC STRICTURE.

The case described by Sir B. Brodie, at page 3 of his valuable work, will give a good idea of the disease. “ A man who is otherwise healthy, voids his urine one day in a full stream. On the following day, perhaps, he is exposed to cold and damp; or he dines out, and forgets, amidst the company of his friends, the quantity of champagne or punch, or other liquor containing a combination of alcohol, with a vegetable acid, which he drinks. On the next morning he finds himself unable to void his urine. If you send him to bed, apply warmth, and give him Dover’s powder, it is not improbable that in the course of a few hours the urine will begin to flow. After the lapse of a few

more hours, you give him a draught of infusion of senna and sulphate of magnesia, and when this has acted on the bowels he makes water in a full stream."

After such an able description, it would be of little use to allude further to a simple case ; but it sometimes happens that the spasm is aggravated by other causes, and the retention increases to a great extent before the surgeon is sent for. I therefore shall allude more at length to the affection. It is rarely met with except in young persons, or those of irritable habit ; although it may become a complication, as we shall presently see, still it seldom affects elderly persons.

The CAUSES have already been sufficiently alluded to, viz., cold, damp, or excesses in liquor ; but these will only act in certain constitutions.

The frequency of the attack will also vary much, as Sir B. Brodie observes, much probably depending upon the patient's constitution, but much also on his mode of life. One person may suffer once in six months, while another may be affected in the same way every week or fortnight. The situation of this form of stricture, nearly all authors are agreed upon, is at the membranous portion of the urethra, and is generally attributed to a spasmodic action of Wilson's muscles.

Probably the spasm will be produced near the bulb, and I am of opinion that other portions of the urethra can not be influenced by it ; cases of the kind that have been reported, are due, probably, to inflammation and swelling of the mucous membrane.

THE SYMPTOMS.—I can not do better than state these in Sir B. Brodie's own words. That author says : " The symptoms of retention are formidable enough, and not the less so, as they generally attack the patient suddenly. He is, perhaps, sitting with his friend after dinner, and feels an inclination to make water ; in attempting to do so, however, he is disappointed. A second and a third attempt is made at different intervals, and all without success. Now, however, the case assumes a more serious aspect. There is an indescribable uneasiness felt in the region of the bladder ; the efforts to void the urine are no longer voluntary, the patient is forced to strain, and the whole of the abdominal muscles are seen in convulsive action, instinctively endeavoring to unload the bladder of its contents. This viscus may be felt hard and large above the pubes. The heart soon begins to sympathize with the local irritation ; the pulse is hard and strong, the face flushed, the skin hot, and the tongue covered with white fur. Perhaps the violent efforts of the patient may force out a few drops of urine, and thus afford him some relief ; but the kidneys go on secreting, and the relief is only temporary. In the great majority of cases the spasm is spontaneously or artificially relieved ; but there are, nevertheless, numerous examples of the contrary, in which the retention terminates even in death. The bladder itself may be ruptured at the fundus, the urine escaping into the surrounding cellular membrane, and into the abdomen."—*Diseases of Urinary Organs*, page 12.

The DIAGNOSIS of a spasmodic stricture is said to be derived from the possibility of passing urine at one time of the day and not at another, from the suddenness of the attack, and from the complaint not being preceded by symptoms, which we shall presently see attend the other forms of stricture ; lastly, by the introduction of a bougie.

The diagnosis of spasmodic stricture is not so easy as some authors have imagined ; Rynd, for instance, states : " When, therefore, there is complete retention of urine when a patient applies, writhing and straining with painful and continued efforts to discharge his bladder, and yet not a drop appears, no matter what his other maladies may be, the presumption is that he is now suffering from spasm." " The same opening that permitted a passage on one day should do the same on the next, or nearly so ; and probably would but for the super-addition of some spasmodic action."—*On Stricture*, page 60.

I can not see why we should believe that this state of things may not equally be produced by congestion or local inflammation coming on in consequence of increased obstruction ; and I should say it must be always very difficult, if not impossible, to distinguish retention caused by spasms of muscles, and that produced by inflammation of the mucous membrane.

The PROGNOSIS is not unfavorable, provided a surgeon is called early ; but at a later period it is somewhat more severe, though by no means very serious. The patient should, however, be told that these attacks, if they become frequent, are liable to lapse into other forms of stricture, and the prognosis will be considered under those divisions.

The TREATMENT of a single case has already been alluded to ; when this fails, or the surgeon is called at a late period, Sir B. Brodie recommends the following plan. Believing the cause of retention to be local, he would reject the warm bath and bleeding, and advises the use of the smallest gum catheter, which has been kept for a considerable time on a curved iron wire. It should be introduced without the wire, and as it approaches the stricture the concavity of the catheter should be turned toward the pubes, elongating the penis, by drawing it out as much as possible. If this fails, Sir B. Brodie recommends us to try a catgut bougie, which failing in passing should be pressed against the stricture, and when *the patient makes an effort to pass water, the bougie should be suddenly withdrawn* ; this will often be successful. These means failing, it may be possible to introduce a silver catheter, or an elastic gum catheter mounted on a firm iron stilette, into the bladder.

The observations which follow are well worthy of perusal ; but I have already quoted so largely, that I must refer my readers to pages 34 and 35 of Sir Benjamin's work.

Recourse may be then had to opium in dram doses, in the form of clyster, or it may be given by the mouth every hour until the patient can make water.

Sir B. Brodie states he can place no dependence upon the warm bath in comparison with opium. General bleeding has not either appeared to him of much benefit, though he has seen good results from cupping in the perineum. In the early periods he considers the use of purgatives beneficial.

The treatment of each case, however, must depend upon the circumstances that present themselves, and will vary according to the diagnosis. Modern surgeons have now a great advantage in administering chloroform, and in many of these cases its effects are most marked, and superior to the slow and often inefficient use of opium ; the patient's sufferings are thereby relieved, his efforts to make water cease, and the spasm and inflammation subside ; and I believe that, in the great majority of cases, chloroform alone will do more good than anything else, either alone or combined with appropriate treatment.

INFLAMMATORY STRICTURE.

In speaking of acute gonorrhœa, we alluded, at page 60, to retention of urine caused by an inflammatory condition of the urethra generally, and a subsequent oedematous state of the mucous membrane, as shown by the puffy state of the meatus, and we may reasonably suppose that the whole canal is in the same condition, thus offering a mechanical impediment to the flow of urine. This constitutes one of the forms of inflammatory stricture. It may, however, exist alone, or in combination with spasmodic stricture, or may come on in cases of permanent stricture, to be subsequently described.

Sir Astley Cooper states it may follow the introduction of a bougie ; I have, however witnessed the affection most frequently produced in consequence of the use of instruments in cases of spasmodic strictures, and I believe that this latter affection is very frequently complicated with the inflammatory affection.

A permanent stricture, which is sufficiently pervious to allow the passage of a small bougie, will often, in consequence of the use of instruments, cause complete retention of urine from inflammation. I have witnessed the same effects from caustic bougies; hence, its study becomes of great importance to the surgeon, and deserves greater consideration than previous writers have given it, not perhaps as a separate affection, but as a complication.

The TREATMENT which I have seen employed with the greatest success, is that recommended by Sir A. Cooper, that is to say, general bleeding when the symptoms run high, purgatives, leeches to the perineum, or cupping-glasses, and the warm bath, followed by opium in considerable doses. These means are usually sufficient in checking the inflammatory condition of the mucous membrane, and after a few hours rest the patient is able to relieve his bladder. In acute inflammatory stricture the surgeon need not be in great alarm, nor dread rupture of the bladder or urethra. This is not imminent until the second or third day after retention. I should not, however, if all the above means fail, hesitate in introducing a moderate-sized catheter, very gently, into the bladder, and drawing off the urine. In these cases haemorrhage may take place in consequence of the mucous membrane being swollen and softened, but the surgeon will find no firm resistance, as in permanent stricture, and he will easily be able to follow the course of the canal, although it may be much inflamed, and he need not fear making a false passage. As soon as the water is drawn off, the sufferings of the patient cease, and the catheter had better be withdrawn, but the previous anti-phlogistic remedies should be continued. Under this plan the patient will in a few hours be able himself to relieve the bladder. Should this not be the case the catheter may again be introduced, and the urine drawn off; but this will be scarcely ever necessary, and it would be injudicious to leave the catheter in the bladder, as it might only add to the inflammation of the canal.

SUB-ACUTE INFLAMMATORY STRICTURE.

This variety of stricture has not met with that attention which its frequency deserves. In many instances it is not detected until it has become changed into permanent stricture, and which disease the surgeon now finds he has to treat, instead of the supposed case of gleet.

My readers will, however, find a full description of it under the head of gleet, page 82, as that subject could not properly be treated without allusion to this, the most common form of stricture, and one which teaches us how stricture begins.

PERMANENT STRICTURE.

If a stricture I have just alluded to is not recognised, or if it be mismanaged, the disease extends itself, and the complaint is no longer confined to the surface of the mucous membrane, or sub-mucous cellular tissue, but implicates other structures, to be mentioned under the general description of permanent stricture. This form of the complaint may depend upon an organic alteration of the canal of the urethra, or of the surrounding tissues or parts. Let us then consider what is the

PATHOLOGY of these organic changes of the canal.

They may be twofold, depending upon either an alteration of the *surface* of the mucous membrane, or an alteration in the *thickness* of its parietes, or on an affection of the *parts around the urethra*.

1st Variety. *Alteration of the Surface*.—Various forms of ulcers, with their edges more or less elevated, and a surface presenting a fungous appearance, may be the cause of stricture, as Bruner and Mery have long since stated.

In certain cases the calibre of the urethra is diminished by vegetations, as Hunter, Bell, and Baillie, have admitted. These vegetations may occupy any part of the canal. M. Ricord states that he has also found vegetations not only in the membranous, but likewise on the prostatic portion of the urethra, in the same subject.

Laennec mentions cases where he observed false membranes attached to the mucous membrane of the urethra, thus producing stricture. M. Ricord, in citing these observations, says he has never met with similar cases, but in no way doubts the possibility of their occurrence.

In addition to the lesions of the surface above described, I must mention cicatrices, which may be either the result of ulcers of various kinds, seated at various points of the canal, or may follow rupture of the canal, as happens in cases of chordee, or it may proceed from tearing of the parts with instruments, accidents, &c. Gangrene may produce a loss of substance, and the part, in cicatrizing, may not only diminish the calibre, but likewise shorten the urethra, or produce on its surface bands or bridles, which may more or less alter the dimensions of the canal. Let it be remembered that cicatrices are permanent alterations, and that when once formed they have no tendency to become absorbed. This must be borne in mind by those who recommend the use of potassa fusa, or any treatment which will produce a slough.

Sömmerring and other authors have spoken of an hemorrhoidal state of the posterior part of the canal; this often depends upon an impeded circulation of the part. In such cases, bleeding frequently occurs under slight causes, as on the introduction of an instrument, or even after voiding the urine.

2d Variety. *Alteration in the Thickness of the Mucous Membrane and Sub-Mucous Cellular Tissue.*—It has been stated that acute or chronic inflammation often produces a swelling of the mucous membrane, and this frequently becomes a cause of stricture; but as inflammation lingers longer, and is more severe, in the deeper portions of the canal, this variety occurs most frequently in these situations. The swelling does not always present the same conditions; it may be either circumscribed or diffused, may occupy only a point or the whole circumference of the canal, and, as in all other tissues, be accompanied with softening or induration of the membrane. A fungous degeneration is sometimes a consequence, and not unfrequently a callous thickening of the parts takes place, which bears a strong analogy to cartilage.

There is, however, another alteration in the canal, which theories at one time or another in vogue have prevented surgeons from paying that attention to which it deserves. I refer to that form of induration which elsewhere I have called specific, and which accompanies chancre in the urethra, as well as in other parts. These indurations may be seated in any portion of the urethra, and usually resist local treatment, or even become aggravated by mechanical means of cure, whereas they disappear very rapidly under general treatment, and which will be fully dwelt on under the head of chancre of the urethra. Cancer, scrofula, &c., may give rise to swelling of the urethra, and thus produce stricture.

3d Variety.—It has been stated that permanent stricture of the urethra may depend upon *affectations of the parts around the canal*. The most common among these are various inflammations of the cellular tissue, which, terminating in suppuration, occasion a loss of substance, and in healing producing cicatrices, or leave indurations which produce deviations of the canal, and diminish its calibre. In addition, it is found that the prostate, or any one of its lobes, may become enlarged; and it has become the universal belief, since the days of Sir E. Home, that stricture in the deeper portions of the canal depends upon this cause, or upon abscess in the neighborhood. It is easy to conceive how any substance which can act on the outside of the canal, or become lodged in its

cavity, will be, to a certain extent, a cause of stricture. In fine, any of the morbid states above described may exist alone, or they may become combined, and thus give rise to stricture.

CAUSES.—Although gonorrhœa is a very frequent cause of stricture, still other affections may give rise to the permanent form. M. Ricord cites the case of a young man, twenty-five years of age, who had been subject to difficulty in passing water from his infancy, although he never had a discharge from the urethra, nor was there any foreign body present in the bladder to account for it. This patient, when he entered the hospital, labored under stricture of the urethra, and a most attentive examination failed in recognising any alteration of form in the prostate gland.

But, if other causes *may* occasion stricture of the urethra, it can not be doubted that venereal disease, and particularly gonorrhœa, most frequently produces it.

Nothing is more common than to meet with a difficulty in voiding the urine, amounting even to retention, in the acute stage of gonorrhœa, even at its commencement, to which the name of inflammatory stricture has been given. Such strictures are the result of phlegmonous swelling, or of an œdematosus infiltration into the submucous cellular tissue, and they disappear when the acute stage has passed away; but it is not uncommon to see this state prolonged, or pass on to a chronic form, together with the inflammation which has given rise to it.

Such strictures are usually of considerable extent, and are frequently situated near the bulb, or the membranous portion of the urethra, in old-standing cases which have resisted the usual modes of treatment. The extent and severity of strictures often depend upon the number and duration of gonorrhœas. This fact is of great importance, as it proves that the use of injections has been too often condemned without sufficient reason. (See page 84.)

It has, I hope, become clear to my readers that injections, under the proper restrictions (which I have alluded to at page 84), as they tend to check inflammation, so must they prevent one of the most powerful causes of strictures; and as astringents, under certain circumstances, tend to remove the soft hypertrophy of mucous membranes, so they may be said to cure, rather than give rise to stricture. When popular errors are to be combated, I am always glad to cite the opinions of those who are so deservedly respected in the profession, and on the present occasion I can not help quoting a phrase of Sir B. Brodie. That gentleman, at page 9, says: "Permanent stricture frequently follows an obstinate gonorrhœa. Astringent injections have been sometimes considered to be causes of this disease; but I certainly believe that more blame has been attached to them than they really merit. It is the abuse, and not the use, of injections which is to be deprecated. I have no hesitation in saying, that there is greater danger as to the production of stricture from a very long-continued gonorrhœa or gleet, than from the prudent use of a mild astringent injection."

The SITUATION OF STRICTURE is various, but it is found most frequently at the membranous part, and at the bulbous portion. It has been stated that when several strictures exist, one is always found in the latter situation. There are exceptions to this rule, and M. Ricord says he is astonished at finding that M. Civiale has only met with two such cases.

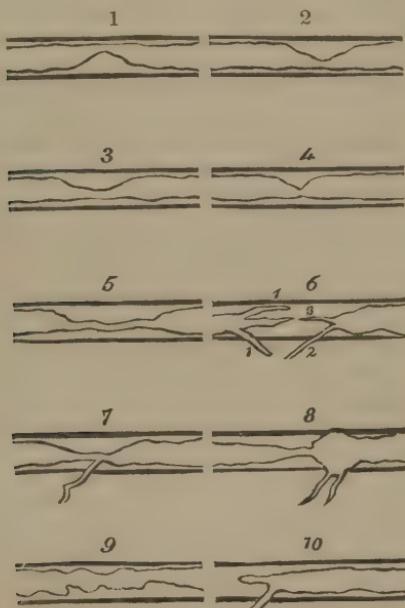
Hunter and Sæmmering state they have never met with cases of stricture of the prostatic portion of the urethra. M. Ricord, however, has seen this part of the urethra narrowed, independently of the prostate. Mr. Crosse cites a similar case.

The NUMBER OF STRICTURES may be various; one only may be present. Ducamp affirms that one, or at most two, is the usual number: in this respect,

BLENNORRHAGIA IN THE MALE.

adds M. Ricord, Ducamp is correct. Nevertheless, Hunter states that he has met with six strictures in the same patient. M. Lallemand, of Montpellier, has seen seven, and Calot eight. About three years ago a patient was admitted into the *Hôpital du Midi*, whose urethra was strictured in its whole extent; there were ten fistulous openings, the most anterior of which was seated on the side of the *frænum*; the others were situated along the spongy portion of the canal as far as the bulb.

The FORM OF STRICTURE may likewise differ; viz., it may consist simply of a little band, or septum, stretched across the canal: this is called, by Sir A. Cooper, the riband stricture; a part or side of the canal may alone be affected. In cases of callous stricture, the induration may occupy the whole circumference of the canal, or a part only, as may be proved by the *porte empreinte* of Ducamp. The stricture, again, may be confined to a small part of the circumference of the canal, or it may occupy an inch of its extent: this, by Sir A. Cooper, is styled the corded stricture. Several different forms of stricture are shown in the annexed figures.



A—The cut edges of the corpus spongiosum.

B—The urethra.

C—The stricture.

THE SYMPTOMS OF PERMANENT STRICTURE.—In consequence of inattention or ignorance, a person may for a long time be subject to stricture without being aware of the fact. However, he usually perceives that his water passes with difficulty; the stream of urine, which at first had diminished in size, becomes gradually smaller, until it comes away drop by drop, trickling or dribbling down, and staining the trousers of the patient, so that in the street an experienced eye detects at once the individual who is laboring under a severe form of strictured urethra. Patients suffering from stricture, when they consult a surgeon, tell him that the urine passes in a corkscrew fashion.

These symptoms are not exclusively those of stricture, as I shall now attempt to prove. A sluggish bladder will often cause the urine to dribble away, and fall on the shoes of the patient; and, on the appearance of this symptom alone, the surgeon would be rash to come to a conclusion that stricture existed. The

same effect will be likewise produced when the penis possesses an unusual degree of contractility, or when it is in a state of erection.



The spiral or corkscrew stream may be produced either by a stricture or by the relative position of the canal to the opening of the meatus. The canal being circular, and the meatus linear, if the bladder does not act with its accustomed vigor, the difference in the direction of these two portions of the canal may give the stream of urine a spiral form.

The cause of the urine being spurted out is sometimes owing to the opening of the meatus being high up; and in such cases, if the bladder act vigorously, the stream of urine will be propelled upward instead of directly forward. The same effect is produced by an enlargement of the middle lobe of the prostate. Another symptom of stricture has been drawn from the modification in the ejaculation of the semen. Thus, during the act of coition, the patient feels that an emission of semen is taking place, but none passes from the meatus; afterward, however, that secretion is seen oozing out by degrees.

These modifications in passing urine, or in ejaculation, may be accompanied with pain, or swelling of the penis, and the application of the finger detects a hardness at some particular point. Often the patient contracts the habit of drawing out the penis, and the practitioner might imagine he suffered from calculus, were not the other symptoms of that affection wanting. Thus, in stricture, the penis is longer than usual; chordee is likewise often present, and the organ may be drawn, in erection, downward, upward, or laterally. Of course this form of chordee is to be explained by a less degree of elasticity in the corpus spongiosum, as compared with that of the corpora cavernosa, in consequence of the deposition of plastic lymph within its cells.

Another very frequent symptom of stricture is a discharge from the urethra, which we call gleet, and which the French designate by the term *suintement*. This gleet may sometimes be the only symptom present; it may consist in a mucous or purulent discharge, or the only trace of it is to be found in the existence of little threads, resembling vermicelli, in the urine; slight as this sign is, it very often annoys particularly hypochondriacs, who find, by reading books, that some authors consider it as a symptom of stricture, even in the absence of any other. The dyspeptic will collect his urine in a glass every morning, examine it most minutely, to see if any fibrillæ exist; if they are found, he is miserable during the next week.

The real value of this symptom has already been discussed at page 80, under the head of gleet.

As, however, under the chapter on gleet, it was found necessary to forestall much that I have to say on one of the forms of stricture, under this chapter on stricture, some observations remain to be made on gleet.

In the form of sub-acute inflammatory stricture, the discharge producing gleet comes from the whole surface implicated; in permanent stricture the gleety discharge most frequently comes from the mucous membrane behind the stricture, and is produced by the stream of urine being necessarily checked at the back of the stricture causing irritation, speedily followed by inflammation. If stricture has previously existed, the inflammation becomes aggravated; the

urine reacts on the inflamed membrane, which often becomes softened, and a secretion arises as a direct consequence of the strictured canal. It is in such cases that I regard stricture as the cause of the gleet, although, as I have previously observed, a gleet may exist independently of stricture, may cause stricture, or lastly, stricture may occasion gleet. Hence the practical advice given above, of passing an instrument in old-standing gleet, to ascertain if stricture already exists; otherwise, after using injections, your patient, on consulting a brother practitioner, may lay at your door the stricture; a charge which he will be unable to substantiate if on previously sounding your patient and finding a stricture you point it out to him.

In addition to the inconvenience above stated, a gleet gives rise to other consequences; thus, if the canal be much diminished in calibre, this discharge will, by plugging up the passage, occasion complete retention, particularly when the bladder acts freely; if it does not plug up the passage, the tenacious secretion may adhere to the sides of the canal, and cause the patient to make water in a spiral stream.

The adherence of these shreds of mucus to the walls of the canal might, in a case of simple gleet, by causing the patient to make water in a spiral stream, lead the surgeon to suppose that a stricture really exists. But even without passing a bougie, the practitioner may always suspect this cause, if the patient state that the stream of urine is only altered from time to time; should it, however, be permanent, he must attribute it to inequalities of the canal, in fact, to organic change. Inattention to these circumstances has, I am convinced, caused many persons to mistake the effects of mucus blocking up the urethra for spasmodic stricture.

A sluggish bladder will produce the same effect; but this cause will be at once recognised, if, when that organ has nearly emptied itself, the stream becomes natural.

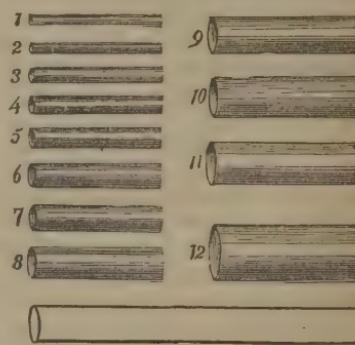
The preceding observations may show how guarded we should be in giving an opinion on the existence of a stricture simply from the signs above enumerated, as they can not be depended upon, although of value when associated with others.

Fortunately for the surgeon, he has other means of determining whether a stricture really exist or not.

This he ascertains directly by exploring the canal, from before backward, by the aid of various instruments, composed of metal, or of elastic and pliable substances, called

Bougies, which may be either solid or hollow. Their shape is likewise different; they may be either straight or curved.

Their volume, like their shape, differs materially, as shown in the annexed cut; they may be cylindrical, conical, or fusiform; by this term I mean that one portion of their circumference may be larger than the rest.* See also woodcut on succeeding page.



* It may be supposed that this means of exploration gives us at once unequivocal signs of stricture. Such is the case when an instrument introduced into the urethra becomes firmly embraced by the stricture; any one having once felt this sensation can never mistake it. But, as is usually the case in medicine, if this be easy, there are other cases in which the diagnosis becomes very difficult. I have above stated that a spasmodic stricture may occur, and prevent the passage of the instrument; in other cases, it will be impossible to pass a small bougie, whereas a large one enters without difficulty; a curved instrument sometimes passes where a straight one will not. A soft instrument may likewise bend upon itself, and produce the sensation as if a stricture existed, and the surgeon is not a little surprised, after gradual pressure, to see the extremity of his bougie reappearing at the meatus. It hence results that, with the exception of the first instance, it is often difficult to diagnose a stricture, and the surgeon may be often led into error. The preceding observations also show how necessary it is to employ various instruments before coming to a decision.

Not content with the explorations of the canal from before backward, some surgeons have proposed to detect strictures by means of an exploration from behind forward; for this purpose M. Amussat has invented an instrument, which, when introduced into the urethra, by means of a spring, causes a button at its further extremity to protrude; the instrument is then gradually withdrawn, and by this means M. Amussat considers that he is able to detect strictures which are not recognisable by other means. That such is the case, there is no doubt; as, for instance, in those diaphragmatic or valvular strictures above spoken of. But, observes M. Ricord, in one of his clinical lectures, it is not of such absolute necessity to treat them; they are permanent, and provided they do not interfere with the functions of the canal, or by their presence occasion disease of the neighboring parts, they should be left alone, for you do no good by removing them if their presence only gives rise to some change in the stream of urine; whereas, by irritating the canal in their removal, you only stimulate and probably produce further mischief. Modern practitioners, have, however, not been content with simply knowing that a stricture exists, and seeking out every little irregularity which may be present on the surface of the mucous membrane, but they have devised means, by exploring the canal, to find the depth at which it is seated. As the organ changes so much in length under moral impressions, and as measurements may be made either during traction or when the penis is hanging down, no two medical men will be agreed on this subject, notwithstanding all that has been lately written upon the subject. The urethra has been further explored with instruments for another purpose, namely, to know the exact position and direction, as well as tightness of stricture; this is done by means of bougies, at the extremity of which is placed a piece of cobbler's wax, which takes the supposed impression of the stricture (see woodcut), but this may not altogether be a real one; frequently true impressions are given, but it often happens that the instrument is stopped where no stricture exists, and at the bulb particularly the wax will receive impression as of a stricture, although none really exist.

DIAGNOSIS OF STRICTURE.—The occurrence of the symptoms, either alone or in combination, together with the errors which the surgeon may fall into, have been sufficiently spoken of; and it is therefore unnecessary to revert again to the symptoms by which a stricture may be detected.

But as there are various lesions which may give rise to the affection, it is to facilitate the differential diagnosis of these (in order that our prognosis and treatment may not be empirical), that I now demand the particular attention of my readers.

In respect to the differential diagnosis of *vegetations* or *excrescences* on the surface of the mucous membrane, I have stated, in speaking of their pathology, that they occur most frequently at the orifice of the urethra; thus, in stricture at this point, we may suspect them to be the cause, although it must be allowed that this alone is of no great use. A bougie introduced into the urethra detects an impediment, it nevertheless passes without great difficulty, accompanied by a peculiar sensation similar to what would be produced by an instrument thrust through the substance of the lung. Considerable haemorrhage follows the introduction of the instrument, although the bougie has not made a false passage, the bleeding being occasioned by the great vascularity of the vegetations.

Vegetations may be distinguished from a puffy or haemorrhoidal state of the mucous membrane, by the absence of that grating impression spoken of; in

both cases haemorrhage takes place. It must still be allowed that the differential diagnosis between these two morbid states of the mucous membrane, however important, is difficult, and can only be made in some cases; of course these two states may mutually accompany each other, and in such instances no positive conclusion can be arrived at.

The occurrence of strictures dependent upon *cicatrices* may generally be diagnosed (independently of the general signs common to all) by the bougie becoming firmly fixed in the stricture, which is with difficulty dilated, and no haemorrhage following; lastly, the *porte empreinte* shows that the stricture is linear, not presenting that thickened state of the surrounding parts seen in the following form, that is to say, in the callous stricture; the same result is produced by the introduction of M. Amussat's instrument.

In cases of strictures caused by a *callous state* of the mucous membrane and surrounding tissues, no bleeding will follow the introduction of a bougie, which becomes firmly held by the stricture; they yield, like the last, slowly to attempts at dilatation, and are usually situated deep in the canal, where chronic inflammation lingers the longest; thus we usually find them in front of the bulb, and the finger may often detect them in consequence of their extent and hardness. The *porte empreinte* further corroborates the diagnosis.

I can not here pass over in silence the differential diagnosis between indurated stricture, the result of a simple and that of a *specific inflammation*; for, as I have elsewhere wished to prove, the urethra is subject, like every other part of the body, to chancery and induration of a specific nature.

At an early period, however, our diagnosis can only be a rational one derived from the history of the case, as in both species of stricture a discharge has been observed from the urethra: inoculation, however, will at this period decide the question. Called upon for an opinion at a later period, say two months, when all discharge has ceased, our diagnosis must be based upon the concomitant circumstances, namely, the occurrence of secondary symptoms, which seldom fail to appear if the induration be of a specific nature. I have had several occasions of observing this in private practice, and, as will hereafter be shown, the treatment must be quite different, as one or the other view of the subject is taken—namely, whether the induration be specific or not.

PROGNOSIS OF STRICTURE.—As regards the prognosis of stricture depending upon vegetations, we can not expect a speedy cure, for the surgeon is well aware how liable they are to be reproduced even when removed; and, being situated within the urethra, their removal is very difficult. In respect to the softened, puffy state of the mucous membrane, we can usually promise the patient a speedy and permanent relief: perhaps, of all strictures occurring in the urethra, this is the most easily cured.

Stricture depending upon cicatrix renders a cure neither speedy nor permanent. The tendency all cicatrices have to contract, in consequence of the peculiar tissue of which they are formed, is well known: but we must remember that, as a cicatrix is a permanent morbid structure, we have no dread of augmentation of the stricture if left alone, provided it does not completely close the canal. Should it narrow the calibre of the urethra, we must give a very unfavorable prognosis, as most probably it will produce disease of the bladder and of the parts situated behind the stricture: lastly, we can depend little upon destroying the cicatrices, as we only cause still larger ones to be formed.

Unfortunately, our prognosis of a callous stricture is very little more favorable than the last, unless we are called upon to treat it soon after its occurrence. When once organized, this cartilaginous mass closely resembles the structure of cicatrix: its elements, in fact, are the same, and it is a rebellious form of stricture. Sir B. Brodie says: "In a few cases of incipient stricture, and in some of those in which a stricture is merely spasmodic, after a bougie has been

used for a certain length of time, the use of it may be dispensed with, and there will be no recurrence of the disease. But these cases are rare exceptions to the general rule, which is, that there is danger of a relapse, and that a patient who is desirous of continuing well must submit to the occasional use of the bougie ever afterward."—*On the Urinary Organs*—1849 : p. 71.

M. Syme, in commenting on this passage, adds : " My own experience would not lead to a statement quite so discouraging"—" but although the risk of relapse may thus be lessened [by fully dilating the stricture], it certainly can not be altogether prevented, and the disease too frequently maintains its hold during the remainder of the patient's life ; becoming more troublesome and less manageable as age advances, so as at length to destroy all comfort by day and night, exhausting the patient's strength ; and finally puts a period to his existence, after a long struggle between contraction and dilatation."—*Syme on Stricture*, p. 51.

As regards specific induration, the local disease usually disappears under proper treatment ; but it shows that the system is under the influence of syphilis, the prognosis of which will be found under Chancre in the Urethra.

THE TREATMENT OF STRICTURE necessarily follows that of the prognosis in the order of the description we have pointed out. It, however, by no means follows that strictures of the urethra should be considered as a morbid state, to which we are called upon to apply our treatment. We have before stated that stricture is, in some cases, a definite termination of an affection of the urethra, and bears the same relation to it as do cicatrices to ulcers, or union by the first intention to simple wounds. The urethra may be altered in direction, or even its calibre diminished ; and provided no discharge follow, or any inconvenience in the functions of the neighboring parts (as, for instance, of the prostate, vesiculae seminales, bladder, &c.) succeed, the surgeon is not called upon to treat the case simply because the diameter of the canal is slightly diminished, or in consequence of the stream of urine becoming irregular ; for, under such circumstances, a treatment becomes only a source of irritation, instead of a means of relief. " I am well aware," states M. Ricord, in a note to the French edition of Hunter, " that strictures are often more quickly cured in proportion as they are early treated ; but this law, general as it is, does not the less admit of exceptions, particularly in that form of stricture which may be called definitive."

We may hence conclude that it is only in cases which have a tendency to increase, or which interfere with the direct functions of the urethra, and those of the surrounding organs, that we should submit our patient to treatment.

Many authors, and Hunter among the rest, are of opinion that local treatment is the only one required in case of permanent stricture ; yet the more or less inflammation present, the strength or weakness of the patient, as well as various complications, may require other means than those demanded for the simple destruction of an obstacle in the canal. This is probably the case in that form of stricture which depends upon the specific induration of chancre, and which, although usually refractory to local treatment, yields to general means employed to cure the specific disease.

Hence, then, we must divide our treatment into general and local.

The first may be simple, directed only to combat the inflammatory state, as well as spasm and various complications which are present ; it may, moreover, be specific or special, and employed to destroy the peculiar cause of the disease, as in indurated chancre.

The second comprehends simple applications, as well as dilatation, cauterization, scarification, or incision by the various instruments we shall hereafter describe. With respect to the treatment of stricture by general means, I shall only refer my readers to what I have previously said in speaking of gonorrhœa, and the treatment of chancre in the urethra ; and shall, therefore, pass on immediately to the consideration of the

Local Treatment.—The use of various applications generally considered as tending to the resolution of inflammation is often of great service when applied externally, or introduced into the urethra; we find that by these means many forms of the induration left after inflammation gradually disappear, and the cause of the stricture ceases under these simple local means.

In the same manner, injections of various preparations into the urethra will cure a stricture depending upon hypertrophy and softening of the mucous membrane. These preparations will have the same effect on the urethra as they have on the conjunctiva; that is, cause a rapid cure.

DILATATION.

It must be allowed, however, that the greater number of strictures resist the means above spoken of, and the surgeon is then called upon to employ others of a more powerful nature: among these I must first place dilatation.

Dilatation, in fact, is the plan of treatment the most generally applicable, and, whether employed alone or in combination with other means, most frequently succeeds.

Dilatation has been variously modified by different surgeons in different countries, but these modifications may be summed up in the following manner:

1. *It may be sudden.* (Dilatation brusque of M. Ricord.) This plan is particularly recommended and practised by M. Mayor. It consists in passing a large-sized metallic sound into the urethra; and this treatment is founded on the principle that "the tighter the stricture, the larger should be the bougie employed."

"The ingenious surgeon of Lausanne," says M. Ricord, in one of his clinical lectures, "uses these large sounds on the principle that small ones are liable to make false passages, whereas large instruments only tend to dilate gradually the stricture;" and he further draws an analogy between the sound and the head of a child dilating the os-uteri, considering that the mechanism of dilatation will be the same in both. It is unnecessary to show how erroneous this analogy is.

In appreciating this plan of treatment, M. Ricord has stated that in principle it is in some instances true that it is easy to pass a large sound when the stricture can not be penetrated by a small one. Thus, in cases of spasmodic stricture, a small bougie or silver catheter is immediately stopped, whereas a large one passes without difficulty. In old people, where the mucous membrane of the canal is hypertrophied and softened, a small instrument often gets entangled, and can not be pushed forward without the danger of making a false passage, yet a full-sized instrument is admitted.

When a stricture depends upon a slight band or septum stretched across the canal, the introduction of a large instrument will often break through it, whereas a small one will be prevented from passing; but in this case the violence done to the canal may be followed by considerable reaction, and such cases would be far better treated by incision than thus roughly handled.

But if these large bougies are useful in some cases, they certainly are prejudicial where callous stricture exists, for here the surgeon runs the risk of rupturing the urethra if he uses force; and this actually happened in M. Mayor's practice.

I reject, then, the method as one of universal application, but nevertheless approve of it in some rare cases. I can not, however, quit M. Mayor without mentioning to my readers a precept of that surgeon on the passing of instruments; "Introduce them," he says, "with gentleness, and when the point is in contact with the stricture, hold the instrument close to the orifice of the meatus; by this means you may exercise a much greater pressure on the face of the

stricture, and the instrument is less likely to take a wrong direction." A parting objection to M. Mayor's plan is, that this dilatation, even when it succeeds, gives rise to symptoms of considerable reaction, and abscess of the perineum frequently occurs.

2. *Dilatation* may be employed *rapidly* in contradistinction to *slowly*. It consists in passing a small bougie without employing violence, and replacing it by another of a larger size every two or three hours in proportion as the instrument ceases to be firmly grasped by the stricture. This plan of treatment has been particularly recommended by Lallemand of Montpellier, and Professor Velpeau of *La Charité*, although many practitioners, particularly Hunter, have considered it most prejudicial.

It is true, that by this means the surgeon may cause a large-sized bougie, in a few hours, to pass through a stricture which a short time previously resisted a small instrument; but there are many cases to which this treatment is not applicable; particularly when there is an irritable state of the urethra, as this successive introduction of bougies will augment or aggravate it. This is, however, only one of the objections against the treatment; the most powerful is the liability of the disease to return, for it seems to be a law in the economy of stricture, that relapses occur in proportion to the rapidity of the cure of the case. M. Ricord states that he has had under his care a patient suffering from stricture, which three months previously had been treated in this manner, and was supposed to be cured, yet a bougie of half a line in diameter passed with difficulty.

Such are the reasons, then, for the rejection of this plan, and which induce M. Ricord, in his private and public practice, to employ gradual dilatation.

3. *Gradual Dilatation*.—This consists in passing small bougies (the size of which must depend at first upon the tightness of the stricture), and substituting successfully larger ones, allowing sufficient time to elapse between each introduction, so that no irritation of the canal ensues; should such arise, the employment of a larger instrument must be delayed until the irritation has subsided; the surgeon may then proceed with the gradual dilatation, but, on the slightest return of inflammation, discontinue its employment. This line of treatment is slow, but it is very successful, and a cure is generally permanent.

It follows, then, that great advantage may be derived from dilatation employed alone; still, it is prejudicial in cases complicated with ulceration of the canal, as well as in those depending upon bands crossing the urethra, where it tends only to cause irritation. When vegetations are present, dilatation is of no benefit. They will often, likewise, prevent the passage of a bougie, and considerable haemorrhage will result if we persist in our endeavors. Dilatation, again can not be relied upon in the callous stricture which is organized; in place of giving relief, dilatation will have the effect of causing a local inflammation, and thus aggravate the case. When, however, dilatation is employed in callous strictures of a recent date, the greatest advantages may be expected from it; but it is often difficult, *à priori*, to state whether the callous mass be organized or not. As, then, dilatation is apt to produce reaction in callous strictures of old standing, the surgeon must often rest contented when he is able to pass a bougie of two and a half lines in diameter, and cease tormenting the canal farther.

Another question arises: Should dilatation be employed *temporarily* or *permanently*? Each mode of treatment has its objections, as well as its advantages. The frequent passage of instruments is very liable to occasion an irritation of the strictured portion of the urethra. Leaving a bougie in the bladder often tends to produce an irritation of the neighboring organs, as, for instance, irritation of the prostate, bladder, &c. We should, however, prefer the use of temporary dilatation whenever the frequent introduction of instruments is

not very difficult or painful, and when the bougie so introduced ceases to be firmly grasped by the stricture; when, on successive days, it can be employed with facility, and when the bougie can be easily replaced by one of a larger calibre.

Under opposite circumstances, we should employ constant dilatation, by leaving a bougie permanently in the canal. Various authors have recommended that temporary dilatations should be employed for a longer or shorter time—none, however, give any definite opinion. For some years I have been in the habit of introducing a bougie, which is of such a size that it becomes tightly grasped by the stricture, and ordering the patient to retain it ten minutes or more; it is then to be withdrawn, and the symptoms of reaction, if any occur, are allowed to pass off. On the second day the same bougie is introduced, and if it pass easily, the next number which is slightly larger is introduced, and the same directions given. Under this treatment I have cured a great number of strictures, which have resisted other modes of treatment.

When a surgeon wishes to keep a bougie permanently in the bladder, he may allow eight days to pass without changing the instrument, provided it does not get coated with sediment, nor reaction take place.

This plan of treatment is, however, attended with some danger. Among other inconveniences, I may cite orchitis, a free purulent discharge, followed by inflammation of the neck of the bladder, and attended with frequent and ardent desire of making water, as well as tenesmus or incontinence of urine in various degrees, which will depend on the greater or less amount of irritability, or, as more commonly happens, on weakness or debility of the muscular fibres of the viscus. The inflammation of the bladder itself is not an unfrequent consequence of the employment of instruments left in the urethra.

Under some circumstances, ulceration or perforation of the bladder follows, particularly in those cases where the instrument presses exclusively on any particular point. In addition, however, to these accidents, sympathetic phenomena occur of a purely nervous or sometimes febrile nature; under the latter head we may enumerate, as the most common, attacks of fever, of a periodical or intermittent type, which occur or disappear according as the instrument is left in the bladder or withdrawn.

Thus employed, dilatation may act in one of three ways as a curative agent. Its beneficial influence may be exerted in the same way as compression is supposed to act. The introduction of a bougie will mechanically empty the vessels of the engorged tissue; it will likewise excite or stimulate the parts, and cause an absorption of the effused secretion. This is what M. Ricord calls the action of compression produced by dilatation.

The second mode in which dilatation may act, is by occasioning from the strictured surface a free purulent discharge, which will diminish the size of the swollen parts.

Dilatation may produce a third effect, namely, excite such a degree of inflammation or ulceration as will lead to the destruction of the stricture. There are surgeons who pretend that unless bougies have produced this effect, the cure or amelioration they effect will be only temporary. Such, however, is a very erroneous opinion, for we must always bear in mind that ulceration will give rise to a cicatrized surface, which has a tendency to contract; and dilatation employed so as to produce ulceration, instead of curing, will tend to aggravate the stricture.

I believe that the advantages of dilatation can only be obtained when it acts on the principle of compression, and such should be our object.

In order that dilatation be practicable, we have hitherto supposed that the instrument penetrates the constricted parts. This necessary condition is not always easy or even possible to attain; and in the impossibility of passing the

instrument through the stricture, we derive great benefit from exercising a pressure by means of the extremity of the bougie upon its anterior part. M. Ricord states, that during the period he had the care of the diseases of the urinary organs at the Hôtel Dieu, Dupuytren treated many cases with great success, by introducing an instrument every day with great care, and gently pressing on the face of the stricture; he was contented with making slight progress daily, and ultimately the contracted point admitted the introduction of large instruments. It often requires six weeks to pass a stricture, yet if no reaction occurs, and you are successful enough to form a depression on the anterior part, a patient continuance of this treatment will soon get the better of these obstinate cases. Whatever be the theory that the surgeon may adopt, it is an incontestable fact, that, without having previously passed the stricture, the patient may observe, under the influence of this treatment, that his evacuation of water, which at first was nearly impossible, becomes easy and re-established by degrees, and the symptoms of retention of urine, which were imminent, cease altogether, even before the instruments have reached the bladder.

Other plans of treatment have been recommended. Thus Ducamp proposed that a bougie, open at its two extremities, and of a considerable diameter, be passed till its further progress was stopped by the stricture; through this canula, which served merely as a conductor, a smaller instrument was introduced, which he considered would dilate effectually the strictured part.

Latterly, M. Béniqué has proposed an ingenious plan, which consists in introducing into the canal a bundle of small bougies made of catgut, and independent or unconnected one with the other, which the operator successively attempts to push through the stricture until one or the other enters. This idea, says M. Ricord, is pretty; but it has been recommended, rather by a mathematician than by a practical man.

It may be asked, in employing dilatation, either permanently or temporarily, is it necessary that the bougie enter the bladder?

When the stricture exists in the spongy part of the urethra, and the surgeon proposes to employ temporary dilatation, of course it is quite unnecessary to pass the bougie into the bladder; when, on the contrary, the bougie is to remain, its point should be introduced into that cavity: and in order to prevent the occurrence of inflammation or irritation, a well-curved catheter should be employed, one which has been made purposely, as it retains its form better than instruments which have a curved direction given them, simply from containing a stilette.

At the present time, few authors are agreed upon the instruments by means of which dilatation should be performed; and as much diversity of opinion exists on the proper form, I shall here transcribe the opinion of M. Ricord, published in the notes of the French edition of Hunter's works.

" Conical bougies produce the inconvenience of dilating the sound parts more than those which are diseased, and especially of fatiguing the meatus when they are of a large size. On the other hand, when they are inflexible or too stiff, they are the cause of false passages more than any others. But when the surgeon is called upon to treat a stricture which is tight, and which can only be passed by a small instrument, conical bougies made of a supple material are by far the best, and to be preferred to all we have previously alluded to, and so far favor the introduction, that they pass those strictures with ease which impede or render impossible the passage of cylindrical instruments of a smaller size; conical bougies form more easily than others that infundibuliform impression on the face of the stricture, and they insinuate themselves gradually into the strictured part, when gently directed and pushed; besides, their use is accompanied with less suffering to the patient than that of cylindrical instruments of a similar

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Conical Bougie. Fusiform Bougie.



size. To conclude, if my personal experience," continued M. Ricord, "in a large hospital had not taught me the immense importance that attaches itself to the employment of this shaped bougie, the opinion of Dupuytren would suffice to recommend it in opposition to those surgeons who pretend that the employment of conical bougies is now generally abandoned.

" Provided bougies are either cylindrical or conical, when they are of a certain calibre, it is impossible* to prevent their fatiguing the sound parts of the canal, as I have before remarked, especially the meatus and that portion of the canal which corresponds to the *glans*. To obviate this inconvenience, surgeons have employed fusiform bougies, or, as they are called in France, *bougies à ventre*, and which Ducamp has especially recommended. These bougies have the undisputed advantage of only dilating the strictured portion. The principal objection that has been made to them, namely, that they pass with difficulty the meatus, and that they necessarily do violence to the parts which they come in contact with, is untenable; the utmost volume of their enlarged portion ought only to have a diameter equal to that of the cylindrical bougies which the surgeon would employ in similar cases. With ordinary precautions the meatus will be dilated only for an instant, while the fusiform bougie passes; this will be much more readily borne than the old plan of allowing an instrument of an equal volume throughout to remain permanently dilating the canal. I shall here say nothing of those conical bougies, to the extremity of which a small rounded point (bulb) is attached; they constitute a subtlety which sound practice knows how to reduce to its proper value."

I had been for some years in the habit of employing gum elastic conical bougies similar to the bougie herewith delineated, when on my late visit to Paris, I found an improvement lately introduced, which consisted in these bougies being armed with a little olive-shaped extremity (see page 99), to prevent the point becoming entangled in the lacunæ; with this improvement nothing further can I think be desired for the ready introduction of such bougies. I am not aware that these instruments are sold in England; those I possess I purchased at Charriere's, in the Rue de l'Ecole de Medecin.

Surgeons generally employ flexible bougies; some practitioners prefer those made of wax. If, however, wax bougies have an advantage, when they are properly made, of receiving an impression of morbid lesions of the mucous membrane, or of moulding themselves to the natural or artificial curvatures of the canal, it still happens that in employing them the operator finds that they are either too firm for some patients, or else they do not offer sufficient resistance, when he is obliged to make several attempts before he succeeds in getting through the stricture, as they are liable to become soft from the heat of the parts. I may mention that Sir B. Brodie prefers the wax bougie; he states that his preference arises from a wax bougie retaining its bent form, whereas an elastic one has a tendency to regain its straight direction, and hence is not well calculated for being passed along the curved canal of the urethra.

" For my part," says M. Ricord, " I prefer gum-elastic bougies, although, latterly, practitioners have again introduced metallic instruments. I am well

aware that their trifling weight adds nothing to the ordinary dilatation, as performed with milder and more easily borne instruments ; but I would take care not to stigmatize, as some have done, with charlatanism, certain persons who recommend inflexible instruments as simple and economical in hospital practice, as patients can without danger employ them ; a fact of some importance, when the case requires only occasional passing of instruments to maintain the cure.

" Under the head of inflexible instruments, surgeons have classed some bougies, which are not so in reality, or, at least, do not permanently remain so, as for instance, those made of whalebone, which M. Lallemand of Montpellier, praises so much ; as also those formed of catgut, or even those more recently introduced of flexible ivory. These last, made from ivory which has been reduced to a semi-gelatinous state by depriving it of its phosphate of lime, have the advantage of furnishing a solid instrument, which receives any desired curve, according to the case, and offers another advantage, that of becoming soft, and swelling in consequence of moisture, so that although it has a tendency to follow the direction of the canal, will be disposed likewise to dilate it. The objections, however, which have been urged against the whalebone bougies, apply equally to these. Their principal inconvenience depends upon the dilatation taking place in the constricted part, so that the instrument becomes fixed there, and adheres with so much force that it is not always easy to withdraw it without employing such a force as might possibly tear the part, and their use, therefore, not free from danger. Nevertheless, this objection may be in some measure obviated by previously soaking the instrument in water. We may thus derive great benefit from this invention, so happily introduced into France by Mr. Charriere."

After having employed dilatation, and succeeded in relieving the stricture, we should give directions to our patient to pass an instrument every fourth day during the following fortnight, and then once a week for some time ; should a recurrence of the symptoms of stricture follow, or should the stream of urine diminish, it will be necessary to dilate the parts, and wait to see if the cure be permanent.

Consequences of dilating the Stricture.—The young surgeon must not expect that all his cases will be thus favorably brought to a termination, without some occasional mishaps, such as orchitis, inflammation of the prostate and bladder. In other instances, the patient will suffer from shivering fits, and in some cases rheumatism of the most severe and formidable character will come on, thwarting all the effects of dilatation, which must be laid aside until these complications have subsided. Such occasional ill consequences must not, however, deter the surgeon from treating patients on sound principles of surgery ; they should only make him more cautious in employing remedies which the patient should be told will occasionally give rise to these complaints, unless they take precautionary measures, and be warned against committing excesses.

We have hitherto spoken of dilatation as it may be very advantageously employed alone, but we have stated that there are various cases in which it is not only incapable of producing benefit, but tends to aggravate the complaint ; in such instances it may frequently be combined with other plans, one of which I now propose speaking of, viz. :—

CAUTERIZATION.

Its employment is not of modern date. Alphonso Ferri is one of the early surgeons who employed it ; and Ambroise Paré states that he obtained several remarkable cures by cauterization, previously to which he destroyed the hard carnosities. Loiseau, it is well known, cured Henry IV. by means of cauteri-

zation, although the operation was attended with accidents of such a severe nature that he was tried for his conduct.

Latterly, in France, it has been employed, in consequence of the eulogium passed on it by Ducamp, by Lallemand of Montpellier, Amussat, Segalas, and others. In England, in spite of the approbation of Hunter, Charles Bell, and Whately, it has fallen into disrepute; and this is not surprising, when a remedy like this has become the crotchet of certain individuals, who pretend that it is applicable to all cases and every stage of stricture. Unfortunately for patients, the two opposite doctrines prevail. One party will cite cases of failures, and necessarily disparage cauterization; the other will state that they have never met with cases which they were not enabled to cure; in the one and the other case it is in vain to inquire in what forms of stricture this treatment was had recourse to; neither the indications nor contra-indications are even so much as alluded to by those who profess, and are said to practise this treatment.

In order to assist my readers in a just appreciation of the treatment, I shall give such indications for its employment as will, I hope, convince the profession that the greatest advantage may be drawn from its use.

If the surgeon think that it is a line of treatment which of itself is applicable to all cases of stricture, without distinction, he will find cauterization more frequently injurious than beneficial, for in a variety of circumstances he can very easily do without it; but if it be employed with discretion, in cases which call for and are adapted to its use, it becomes not only a means of cure in itself, but is likewise a very good adjuvant to dilatation.

It is under these circumstances that a spasmodic stricture yields to a superficial cauterization, employed not for the purpose of destroying the tissues, but simply with the object of modifying their vitality. In the same manner, strictures, accompanied with ulcerations, or depending on granulations seated on ulcerating surfaces, or on fungous masses, or on a softened hypertrophied state, or simple tumefaction of the mucous membrane, will be cured more rapidly and effectually by cauterization alone, or combined with dilatation, than by the latter treatment only.

If, however, the caustic be employed to destroy cicatrices, which inevitably will be replaced by others of a still larger extent; or if it be used in those hard callous strictures in which resolution is impossible, far from ameliorating the state of the part, it will only aggravate it, and retard or prevent a cure, which other means more adapted to the case would most probably have brought about.

Hunter only advised cauterization in cases where the surgeon is unable to pass the obstacle; hence, according to his views, the caustic could only be applied to the face of the stricture. On the other hand, Ducamp and his school recommended the employment of caustic only in those cases where the stricture is pervious, and thus allows the application of the substance to its parietes. Of these two methods, I prefer the latter, wherever it is practicable; but I should previously dilate the stricture to a certain extent; for although the effect of caustic be that of destroying spasm, and although it may act as an antiphlogistic, it is no less certain that its application is sometimes followed by inflammation and swelling, or haemorrhage even may result, and occasionally a shreddy secretion will follow and give rise, like the eschars which it determines, to an obliteration of the strictured point. According as these accidents are more or less severe, so we may experience a difficulty in passing instruments. In a note upon this subject, M. Ricord states, that he thinks the following directions may be laid down for the employment of caustic.

1. The surgeon may feel himself called upon to cauterize directly from before backward (Hunter's plan) whenever the stricture allows urine to pass, and

yet offers a resistance to the introduction of instruments, however small, or however well directed.

2. The interior of the stricture should be cauterized wherever dilatation has been employed without success, when but little progress has been made, when inflammatory action comes on, or the case gets worse under our further endeavors to increase the dilatation.

M. Ricord is not in the habit of employing cauterization before a bougie of three lines in diameter passes, and hence people might be induced to think that when a bougie of this size passes, it is unnecessary to cauterize; but, as I have just observed, such is not the case, and practice contradicts the supposition. I have seen cases where a bougie of four lines in diameter passed, and yet suppuration continued, and it was only checked by one or two applications of nitrate of silver. It has been a favorite opinion, and one that has been much acted upon, that caustics are endowed with a species of intelligence, attacking only such parts as are the seat of the disease. This opinion is much exaggerated; still, from what we observe on the prepuce, when we cauterize vegetations, we can easily believe that if a stricture depend on these substances, they act the part of a sponge imbibing freely the caustic; but, in cases where no vegetations are present, we do not believe that the sound parts will remain unaffected by the caustic.

Strictures may be cauterized with a variety of substances; thus, Hunter employed the red precipitate, or the sulphuret of arsenic. M. Jobert has greatly extolled the use of calcined alum; with him it was the philosopher's stone, and did not produce any of the inconveniences attributed to caustics. M. Ricord states, however, that he has employed it, and he found that the powder fell out of the little cup and collected around the meatus: hence he attributes the great number of cures, said to have been effected by this treatment to sympathy, and not to any direct effect of the calcined alum; the instrument was modified, but the powder, in passing along the urethra, became hard, and failed in its object. The most powerful objection to this plan, says M. Ricord, is the great tumefaction it occasions. A patient was placed under this plan of treatment, and the stricture dilated so much that a bougie of three lines in diameter passed. Two hours afterward, we were called on account of a retention of urine, and with difficulty were we able to pass a catheter; thus, in spite of all the praises lavished upon it, this treatment is not without danger.

Of all the preparations which I have tried, no one, I think, possesses such decided advantages as the nitrate of silver. Differently-constructed instruments have been used in its application, which it would be useless for me to describe, as this is rather a practical treatise on venereal diseases than one which professes to give an account of the various treatments which have been proposed.

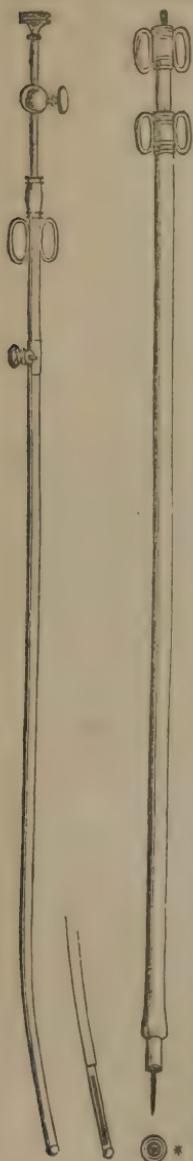
When I am desirous of employing cauterization from before backward, I introduce a canula, as seen in the next page, woodcut No. 2, which encloses a stilette armed at its extremity with a little cup marked *; as soon as the canula is in contact with the stricture, the little cup containing the powder of nitrate of silver, which has been melted by submitting it to the flame of a spirit-lamp, is made to project, and thus the part is cauterized.

I have employed this treatment many times with the greatest success. And it is particularly applicable to a stricture situated in front of the bulb, when we have not been able to get the smallest bougie through the stricture; one application of the caustic often suffices to permit a large bougie to pass, and a cure speedily takes place.

To apply the instrument, the canula must be first introduced, containing a bougie which is exactly adapted to it, in order that no mucus may get entangled in the opening. When the canula is in front of the stricture, the bougie is withdrawn and replaced by a stilette, containing, at its extremity, the little cup

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Lallemand's
Portes Caustiques.
No. 1. No. 2.



of nitrate of silver; and as the stilette is hollow, a very fine bougie is passed up it, and enters the stricture.

In order to cauterize the parietes of a stricture, I can strongly recommend the instrument of Lallemand as the simplest, and the one which best fulfills all the indications. It is composed of a straight or curved silver canula, as seen in the adjoining woodcut No. 1, containing a *porte caustique* fixed on a metallic stilette, which is made spiral, in order to permit the rotation of the instrument. The instrument is passed beyond the strictured surface, the canula is then withdrawn, and the nitrate of silver is thus left exposed to the parietes of the stricture, and may be turned in any direction desired. The *portes caustiques* of M. Lallemand are of different sizes, according to the greater or less tightness of the stricture.

Various have been the modifications, but they have again all merged into the old instrument.

Authors have differed in their opinions as to the time that the caustic should remain in contact with the stricture. Hunter considered one minute the proper time; but when we remember the various lesions to which the caustic can be applied, we may find one minute too long, or not long enough. With Lallemand's instrument I am in the habit of making one or two turns, so that no more time be occupied than in cauterizing in *gonorrhœa præputialis*, as it should be our object to touch superficially the parts, and not to destroy the tissue; so employed, nitrate of silver is among the best of our antiphlogistic remedies. It may be necessary, it is true, to reapply the caustic, but this is unattended with difficulty; when you make little progress, you may generally suspect vegetations to be the cause.

No absolute rule can be given as to the necessity of reapplying the caustic; if the case goes on favorably, it will be useless to have recourse to a second application, but if no amendment is observed, it may be employed in a few days. In books it is stated that we should wait for the separation of the eschars; but they may come away during the night, or unobserved: again, if they are attached by any one point, some time will elapse before they separate, and the vegetations may have time to spread again. Cauterization is usually followed by pain in making water, accompanied with a slight swelling of the membrane; the discharge, at first often sanguineous, takes on a muco-purulent character. These symptoms having passed, and the stricture not admitting the instrument, we reapply the lunar caustic; if, on the contrary, a bougie now pass with ease, a second application of caustic is unnecessary, and the patient is soon cured. If, after having made a certain progress, the

stricture remain in *statu quo*, we should again have recourse to cauterization, guided by principles which will readily occur to every practical surgeon. The employment of

POTASSA FUSA in the treatment of stricture has latterly been much discussed in the medical journals, and I therefore think it necessary to make a few observations on its value as a remedy.

My own experience in the treatment of strictures with this preparation has

been very limited. I have derived so much benefit from the nitrate of silver in all cases in which I felt justified in employing caustics, that I have not had personal opportunities of testing its supposed merits. The history of the remedy, and the opinions on its virtues, have been such that in private practice I should advise the young surgeon to be very cautious in its employment.

With hardly an exception, the verdict of the profession has been against it. Sir Charles Bell, who from his extensive practice must have had ample opportunities of being acquainted with its effects when it was a popular remedy in the hands of Whately and Sir E. Home, in his third letter on stricture, page 75, et seq., gives the results of his experience, and relates experiments which he made with the caustic alkali, fully, I think, bearing out his conclusions. "That when a small portion of it was inserted into the end of a bougie, it became, even during that operation, moist and soft by the absorption of the atmosphere; and that further, when the point of the bougie thus loaded was dipped in oil, or covered with soap, the caustic was rendered mild; and by the time it was carried through the urethra to the stricture, it was little else than a liquid soap, with a large proportion of alkali."

When larger portions were used, sloughing, haemorrhage, and abscesses, occurred, as a perusal of the books treating of stricture, and published at the period when the remedy was in vogue will show. Notwithstanding these unfavorable reports, and with every disposition to test its merits, if unattended with danger, I have made every inquiry to ascertain if the surgeons who now employ the alkali have improved on the old plan of using the caustic, but I find a portion is still attached to the point of a wax bougie, and thus carried down to the stricture. From my long personal experience on the use of potassa fusa in the treatment of ulceration of the neck of the uterus, I know the precautions which I am compelled to take in cauterizing the os-uteri; a pledget of lint dipped in vinegar is absolutely necessary to be placed immediately beneath the part we are about to cauterize, to prevent the deliquescent alkali acting on and destroying the structures it may come in contact with; and with these precautions, even when the speculum is introduced it is very difficult to obviate the danger. Now what must be the consequence in the urethra,* if sufficient quantities of the caustic are used to destroy stricture? and if smaller proportions are employed, with Sir Charles Bell we must believe it to be but a liquid soap, giving a certain lubricity to the urethra.

Sir B. Brodie makes the following forcible observations on the employment of caustic:—

"Notwithstanding what I have now stated, I very rarely use the armed bougie in my own practice, and I never resort to it in the first instance. My reasons for preferring the other methods of treatment in ordinary cases are these: 1. Although the caustic often relieves spasm, it also very often induces it. It is true that in many instances also it brings on a severe retention of urine. 2. Haemorrhage is a more frequent consequence of the use of the caustic than of the common bougie, and it sometimes takes place to a very great, and to an almost dangerous extent. 3. Where there is a disposition to rigors, the application of the caustic is almost certain to produce them; and frequently the application of the caustic induces rigors, where there had been no manifest disposition to them previously. 4. Unless used with caution, the application of caustic may induce inflammation of the parts situated behind a stricture, terminating in the formation of abscess. I have known some cases of abscesses formed under these circumstances, which, from their peculiar

* This danger is borne out by the following observations of Sir B. Brodie: "Whenever the caustic is frequently employed, you are in danger of creating a false passage, in consequence of the dissolved caustic flowing to the lower part of the urethra, and destroying the parts unequally."—*On the Urinary Organs*, p. 62.

situation, have proved more troublesome and more difficult to manage than the original disease."—*On the Urinary Organs*, page 63.

Mr. Syme in equally strong terms deprecates the use of the caustic alkali, and in the following words calls in question the *good faith* of surgeons who advocate the treatment: "On the whole, it seems more reasonable to conclude that in the cases of alleged cure by caustic, there was no real stricture in existence, than to suppose that so improbable, or rather impossible an achievement had been accomplished."—*On Stricture*, page 53.

Instrument of M. Ricord. Notwithstanding all our care, there are, it must be allowed, cases of stricture which not only do not yield to dilatation, but become aggravated under the employment of the caustic. Such are strictures depending upon cicatrices, bridles of mucous membrane, callous indurations, &c. Here, however, our art offers resources that no theoretical speculations can contradict. In these forms of strictures—which undoubtedly are often very refractory—we may advantageously employ cutting instruments, and this brings me to speak of *incision* in the treatment of stricture. A plan, however, which, it must be admitted, is not now so generally employed as it was some few years ago.

INCISION OR SCARIFICATION.—Previous writers on this subject have been too exclusive in recommending this treatment; much good, it is true, may be derived from it, but it is far from being applicable to all cases, as some have pretended. From my own experience, I can cite many instances in which recourse has been had to it with signal success, where other kinds of treatment failed.

Incision is not a novel introduction, as mention is made of it before Hunter's time, although he gives no opinion upon it; of late it has been revived by M. Amussat in France, and still more recently the instruments have been greatly modified in England by Mr. Stafford.

The stricture may be incised in one of two ways, by puncture from before backward, or an instrument may be introduced into it, and the parietes of the canal can be slightly scarified in various points.

The first plan, which may be called *puncture*, has been proposed in cases where we are unable to pass an instrument through the stricture, and is now rarely had recourse to; but its employment will be fully dwelt on under the head of Impermeable Stricture, at page 110.

The second plan, which is more properly called *incision*, consists in passing an instrument similar to the one delineated in the accompanying wood-cut through the obstruction. By this means the stricture may be incised, and a larger bougie will then pass readily. Perhaps it may be here objected, that when we can introduce a bougie, it is unnecessary to use the knife; this, however, is not the case, as may be collected from the foregoing observations. When we have recourse to scarifications, they should be very superficial; incision of the mucous membrane is only required when we are called upon to treat those bridles which traverse the urethra, or to divide strictures of considerable thickness. The instrument I use is composed of a grooved canula, through which passes a stilette, armed with a little blade, which is made to project at will. The advantage it possesses is its simplicity, and the facility with which it is cleaned. It is passed down to the stricture, and the blade made to project, by pressing on the springs;



the canula is then withdrawn, and a bougie passed, which is left in for an hour each day, and gradually augmented in size. I have frequently witnessed the success of this treatment, which has never been attended with ill consequences.

IMPERMEABLE STRICTURE.*

This form of stricture becomes every day less and less frequent; still, in consequence of neglect on the part of the patient himself, or want of decision or judgment on the part of another practitioner, the surgeon is called into consultation at a moment when the patient is unable to empty his bladder, which has been distended many hours. Catheters may have been tried without success; already fever may have set in, and from the feeling of distention of the bladder immediate relief must be given, otherwise rupture of the urethra will occur, followed by all the symptoms of extravasation of urine hereafter to be described.

The responsibility which a surgeon has to incur under these circumstances is very great, and it will require all the presence of mind he possesses, as well as a full share of anatomical knowledge, backed by great surgical experience, fully to appreciate the resources of his art, and bring his patient safely and with credit out of the dangers which menace him.

The surgeon should ascertain from his patient, if possible, how long he has suffered from stricture, what has been the treatment followed, and how long since an instrument passed the obstruction, and if the bladder was reached, whether the patient has been latterly obliged to pass the urine guttatum, and what has been the cause of the accession of the present symptoms. In possession of this preliminary history, the surgeon should now ascertain the state of the bladder, by percussing the distended organ above the pubis, and at the same time observe if there be much fat in this situation, in case puncture of the bladder be subsequently determined on.

Let him examine the prostate by means of the index finger introduced into the rectum; he will be able thus to judge for himself if that gland is generally enlarged, and if not, whether there is great distension behind it, so as to enable him to puncture the bladder in this situation if deemed advisable.

Lastly, let the surgeon examine the perinæum, and ascertain as far as he can externally the probable condition of the urethra. He may find a simple stricture in the spongy portion not more than an inch in length; he may discover a circumscribed swelling which may present the sensation of fluctuation behind it, or he may meet with urinary fistulæ, or masses of hardened cicatrices, or he may discover that extravasation of urine has taken place already, and that a distinct and resistent swelling presents itself in the perinæum, which will convince him that if this be opened the urine will have a free exit.

TREATMENT WITH CATHETERS.—To form a still more correct opinion, however, it will be necessary to pass a catheter, to ascertain exactly the condition of the urethra. The failure of one surgeon should not deter another from attempting to pass instruments.

Liston advises the use of small silver catheters with rings, so that when introduced, the instrument may be kept twenty-four hours in situ.

* Some surgeons have denied the existence of impermeable stricture. In a recent letter to the "Lancet" (vol. i., 1850, p. 605) Mr. Syme says: "There is no stricture of the urethra which can resist the introduction of instruments sufficiently small and guided with sufficient care. I have distinctly stated this persuasion, and am prepared to maintain it without any qualification whatever."

Notwithstanding this opinion, I have headed this division of my subject IMPERMEABLE STRICTURE, because it enables me to collect under this term all the facts relating to a most important subject. Many of our best surgeons admit that some strictures exist which are impermeable, and, agreeing with Mr. Syme in the passage immediately following the above extract, that "any stricture which resists the attempt of a surgeon to pass an instrument through it, though impermeable as far as he is concerned, may not necessarily be so in the hands of others," I shall retain the term, as being less objectionable than any other, as a heading to this part of my work.

Sir B. Brodie recommends a small catgut bougie, or the smallest gum catheters that have long been kept on a curved iron wire, introducing it without the wire; if unsuccessful, he advises the small silver catheter, shorter and less curved than usual.

The surgeon, must, on the one hand, recollect that it is of the greatest consequence to re-establish the natural course of the urine, puncture of the bladder above the pubes or through the rectum, may be a simple means of relieving the distended organ, but we shall always have to revert to treating the diseased canal; hence, from the first we should direct all our energies to enter the bladder by the urethra. It often happens that a clever manipulator will succeed in introducing a catheter when a less skilful one has failed, particularly if the stricture is seated in the anterior part of the spongy portion of the canal, where no false passages exist, and when the prostate is not very much diseased. Even in the very worst cases the instrument may be introduced.

I have lately seen Mr. Stanley succeed in introducing catheters at St. Bartholomew's hospital in some very unpromising cases. The patient is laid across the bed, his back and head supported by pillows, the soles of his feet resting flat on the floor. That able surgeon seats himself in front, between the knees of the patient; a silver catheter, with a flat handle, about No. 4, presenting a very slight curve, is now introduced and carried down to the stricture and pressed against it, so that the point of the instrument should enter the constricted portion, and care is taken that the handle shall always remain* exactly opposite the umbilicus. When the flat unsupported handle deviates to the right or left, the surgeon may suspect that the point of the instrument is in a wrong direction; but as long as the original direction is maintained there is less fear of making a false passage.† Another criterion of danger may be the pain, which the instrument produces. This, however, is a more uncertain guide, as in some instances the patient suffers a good deal even when the catheter is in the right direction. By carefully pressing first in one direction and then in the other, the surgeon will arrive at a knowledge of the exact direction of the canal, and then by depressing the handle to a considerable extent, he may hope to succeed in placing the catheter in the bladder.

In a recent case I witnessed in the practice of Mr. Lloyd at St. Bartholomew's hospital, the patient was placed on the operating-table, and chloroform was administered. As soon as the patient was fully under its influence, a catheter was introduced with the precautions spoken of above; it passed with much less difficulty than could have been expected, and the water was drawn off to the great relief of the patient. The administration of chloroform is a practice I should often recommend before passing an instrument.

The degree of force which a surgeon may employ in passing an instrument into the bladder is thus distinctly stated by Mr. Bransby Cooper: "When the patient presents severe symptoms of retention requiring immediate relief, such as great distention of the bladder, great constitutional irritation, and violent pain, an attempt should be made to pass a catheter, and if this instrument can be brought to a right angle with the position of the recumbent patient, and then, and not till then, becomes checked in its progress to the bladder, it is plain that the obstruction is situated at the membranous part of the urethra, where the operator may safely use force if he apply it judiciously, and by depressing

* If the instrument meets with great impediments at the membranous portion, Mr. Stanley thinks that the finger may be introduced per rectum, so as to guide the progress of the instrument through that portion of the canal, and to inform the surgeon whether the catheter is moving onward in the line of the urethra, or toward the rectum: it can, however, be no guide when the obstruction is treated anteriorly to the membranous portion of the urethra.

† I believe I have seen false passages made, and yet the instrument has retained its proper direction, and when left to itself neither turns to the right nor left, and yet water does not come, although the point of the instrument appears to have a lateral movement. In such cases was the eye of the catheter blocked up with blood or mucus? No post-mortem examination enabled us to judge.

the handle of the instrument ; for the risk which would be incurred in other portions of the urethra by such a proceeding is here in a great measure precluded by this portion of the canal being firmly connected to the surrounding parts of the deep fascia of the perineum, and by the instrument itself being here guided and protected in its course by the os-pubis."—*Guy's Hospital Reports*, vol. v., p. 75.

At page 78 he again says : " I hold, then, that where the symptoms are urgent, and the stricture is situated *posteriorly* to the deep fascia of the perineum, force may be employed with propriety ; but that when the stricture is at the bulb, though the symptoms are not more severe, an operation should be performed, consisting in opening the membranous portion of the urethra."

If the surgeon's attempts are successful, the further treatment of the case is very simple. The urine now has a free exit, and for the purpose of maintaining this necessary outlet the catheter must be left in the bladder, and attached to a suspensory bandage by means of thin tape tied to the rings of the instrument, or to the instrument itself, if it be made of gum-elastic. Another method of fixing the instrument is by attaching it by means of the tape to a ring placed on the penis, and which again is kept in place by other portions of tape passed under the thighs. I can not recommend that the tape should be attached to the abdomen by means of pieces of adhesive plaster, having twice seen the catheter coughed out when it was held only by this last means. In twenty-four hours the silver catheter is withdrawn by some practitioners, and replaced immediately by a gum-elastic instrument, the passage having become much larger in consequence of the suppuration which the persistence of the catheter in the urethra has occasioned. The re-introduction of the instrument is, however, not always so easy a matter, and I should recommend the young surgeon to keep the catheter in the bladder at some risk to the patient's comfort, rather than withdraw it, particularly if on every second day the precaution be taken to wash out the instrument and bladder by injections, which will remove anything that obstructs the eyes of the catheter, and carry off the ropy mucus from the viscera ; or it may be necessary to give remedies for allaying irritation of the bladder.

I should try many things before withdrawing the catheter, even although it gave some little pain, or induced slight irritation, as it does occasionally. I should in addition recommend the surgeon to plug the orifice of the catheter with a little cork, and allow the patient to relieve his bladder occasionally by withdrawing it. Some practitioners object to this, in the belief that if there is not a free egress for the urine, that fluid will find its way by the side of the instrument, and increase the infiltration of urine, if that has occurred. This I think not probable, as the patient can empty the bladder frequently, and generally the catheter is so firmly held by the strictured parts that the fluid will not pass out in that way, at first. The advocates of this treatment should recollect that a collapsed bladder will necessarily impinge on the point of the catheter—a catastrophe not without danger, should it occur, as sloughing of the part is imminent. Lastly, the air can not without risk be permitted to come freely into contact with the bladder ; and this is not obviated even if an empty bladder be attached to the external aperture of the instrument. As soon as possible the silver catheter should be replaced by a gum-elastic one, or, what is now found more advisable, namely, a gutta-percha one, which should be prepared and introduced immediately the silver one is withdrawn, the patient having been desired not to move during the operation. In a week the catheter will have become loose, and urine may pass between it and the sides of the urethra. It should now be withdrawn, and an instrument of a larger size introduced. If the surgeon, however, be unsuccessful in passing an instrument, I may be asked, " What next is to be done ? "

PUNCTURE OF THE STRICTURE.—Provided the prostate be not very much enlarged, and should the perinæum not be distended, nor bear marks of old disease, and if an impassable stricture exist in the spongy portion of the urethra, I should have no hesitation in employing Staffor's instrument, and having pierced the stricture, thus carry a catheter through it

Stafford's Instrument.



into the distended bladder; but under opposite circumstances, when there is diseased prostate, and we have reason to think that the stricture extends an inch or more in length, and far back, or when false passages exist, this treatment by puncture of the stricture would not be advisable. Finding, then, all our endeavors frustrated in getting a catheter into the bladder through the urethra, several plans of treatment are left for the surgeon.

The first is, CUTTING INTO THE PERINÆUM BEHIND THE STRICTURE, for the purpose of finding the urethra, and passing a catheter into the bladder, and then passing a portion of bougie from behind forward through the stricture, so as to re-establish the natural canal. This plan, wholly or partially done, has had many able advocates,* and in many instances is attended with great success. Thus, when a fistulous opening or abscess exists, or the distended urethra can be felt behind the stricture, or when extravasation has occurred, an opening may be made in the perinæum, in the hope that the urethra may be found. But it is only those who have attempted, or seen this operation attempted, can speak of the numerous difficulties which often attend it, under

* Liston says: "Rather than puncture the bladder, the stricture should be cut down upon, and an opening made into the dilated part of the urethra behind the stricture. A fine silver catheter is passed down to the stricture, and retained there by an assistant; an incision in the line of the central raphé (supposing the constricted part to be in the perineal region) is made over the extremity of the instrument, the contracted part of the urethra is divided, and the catheter passed on into the bladder. Thus, even in the worst cases, the natural course is at once established. In every instance of difficulty and complication, the catheter, however passed, should be retained for two or more days. The above is the only advisable mode of puncturing by the perinæum."—*Elements of Surgery*, page 135.

Mr. Bransby Cooper thus describes the operation: "The patient should be placed in the same position as for the operation of lithotomy, and an incision of about two inches in length be made in the course of the raphé of the perinæum, dividing the superficial fascia. In operating for stricture, there being no staff to serve as a guide to the membranous portion of the urethra, advantage is taken of the raphé as a guide in cutting. After the incision has been made, the second step of the operator is to pass the fore-finger of the left hand into the upper part of the wound, directing it toward the arch of the pubis, when the urethra will be readily felt, especially if the patient be desired to strain, as in the attempt to make water. The incision is then to be made into this distended and fluctuating canal,

and through the opening a female catheter is to be passed into the bladder, and the urine drawn off. A male catheter should be passed through the penis down to the stricture; its point should then be felt for, with the finger in the incision which has been made in the perinæum, and will be perceptible through the thickness of the stricture, the distance between it and the finger being of course the depth of the adventitious growth which constitutes the stricture. This must next be divided by the knife, and the male catheter may then be passed on into the bladder through the opening which had been made for the introduction of the female catheter: the instrument is afterward to be kept in the bladder."

opposite circumstances to those before mentioned. The young surgeon should recollect that old disease has altogether altered the natural structure of the perineum: in cutting into it he has no guide, no catheter will pass, and he has therefore no staff to cut down upon; and I have heard of patients taken back from an operating theatre without an opening having been made into the bladder through the perineum. Even in successful operations the haemorrhage has been very profuse, in consequence of the vessels not being able to retract in the hardened tissues, and the patient has subsequently sunk under the combined effects of the disease and the operation.* I should therefore dissuade my readers from undertaking this operation, except under the peculiar circumstances mentioned above; although some eminent men have recommended it, "as killing two birds with one stone." If attempted, the surgeon should make his incision as much in the line of the raphé as possible.

SYME'S TREATMENT BY PERINEAL SECTION.—Instead of resorting to the operation to which, as stated in the foot-note, Mr. Syme so much objects, that eminent Edinburgh surgeon has lately proposed, in his work on stricture, to pass a grooved instrument through the obstruction (for, as previously stated at page 107, the existence of impermeable strictures is disbelieved in by him), so as to freely divide the diseased structures in the following manner:—

"If the patient has a great deal of pain, and wishes to escape from the slight degree of it which attends the requisite incision, he should be placed under the influence of chloroform; not partially, so as merely to suspend his consciousness or impede his recollection of suffering, but completely, so as to prevent any restlessness or unruly struggle, which would tend very seriously to increase the difficulty of the procedure. He should then be brought to the edge of the bed and have his limbs supported by two assistants, one of them standing on each side. A grooved director, slightly curved, and small enough to pass readily through the stricture, is next introduced, and confided to one of the assistants. The surgeon, sitting or kneeling on one knee, now makes an incision in the middle line of the perineum or penis, wherever the stricture is seated. It should be about an inch and a half in length, and extend through the integuments, together with the subjacent textures, exterior to the urethra. The operator then taking the handle of the director in his left, and the knife, which should be a small, straight bistoury, in his right hand, feels, with his fore finger guarding the blade, for the direction, and pushes the point into the groove behind, or on the vesical side of the stricture, runs the knife forward so as to divide the whole of the thickened texture at the contracted part of the canal, and withdraws the director. Finally, a No. 7 or 8 silver catheter is introduced into the bladder, and retained by a suitable arrangement of tapes, with a plug to prevent trouble from the discharge of urine."

"The process having been thus completed—which it may be, in less time than is required for reading its description—the patient has merely to remain quietly in bed for forty-eight hours, when the catheter should be withdrawn and

* Sir B. Brodie says: "As to the puncture of the urethra, between the stricture and the prostate, it is true that a surgeon who is quite conversant with the anatomy of the perineum, if he proceeds carefully, will be able to accomplish it in a thin person; but a surgeon who has been living where he has had no opportunity of keeping up his knowledge of this part of anatomy, will not find it a very easy task to cut down on the membranous portion of the urethra, when neither sound nor catheter can be introduced into it to point out its situation; and in a fat person, with a deep perineum, I suspect that this operation will sometimes perplex even the best anatomist."—*Diseases of the Urinary Organs*, page 40.

Mr. Syme likewise strongly objects to this mode of treatment. He says: "The last, and certainly the most objectionable of all the methods which have been mentioned above as in use for the treatment of stricture, is cutting into the perineum in search of the obstructed canal, without any other guide than the point of a catheter, introduced, not through, but merely down to the contracted part."—*Stricture of the Urethra*, p. 56.

It is Abernethy, I think, who relates that John Hunter was called one night to cut down and find the urethra; but that anatomist, in his shrewd way, advised the patient to be put to bed, being of opinion that daylight was best for performing this delicate operation.

all restraint removed. The urine sometimes maintains its proper course from the first, but more frequently passes in part through the wound for some hours, or it may be a few days. No attention or interference is required on this account, but at the end of eight or ten days a moderate-sized bougie should be passed, and repeated once a week or fortnight for two months. In most cases the cure may then be deemed complete and lasting. But if the tendency to contraction should have been extreme, or if the patient's way of life should be such as to favor the reproduction of stricture, it will be a prudent precaution to have the bougie passed four or five times in the course of a year, in order to avoid all risk of further trouble."—*Strictures of the Urethra*, p. 43.

Mr. Syme adds: "Of all the cases in which I have divided the stricture, only one has been followed by any unpleasant result—erysipelas of the perineum, extending over the whole surface of the body, accompanied by constitutional disturbance so violent as to prove all but fatal."—P. 40.

I have witnessed this perineal section performed several times, in the most able manner, but the patients have all died. In itself the operation is very easy, but the subsequent results are not, at least in London,* so favorable as Mr. Syme appears to think; still I believe we are not yet in possession of a sufficient number of facts to warrant us in rejecting an operation which has been so highly successful in the hands of Mr. Syme, particularly when we consider the great mortality attending the treatment of these bad stricture cases.

PUNCTURE OF THE BLADDER THROUGH THE RECTUM.—Supposing the case very urgent, two means of relieving the bladder still remain. If examination per rectum has not detected an enlarged prostate, a long curved trochar may be passed along the index finger of the left hand, previously introduced into the rectum beyond the prostate, and the bladder punctured in the middle line. The canula should be left in for the next twelve hours, and it may then be withdrawn, or replaced by a piece of elastic-gum catheter. If withdrawn, however, the opening may rapidly close; if left in the wound, it is difficult to keep the instrument in its right position without great inconvenience to the patient when he passes his motions, as well as irritation of the bladder. In addition to these objections, the nates are kept constantly wet, and when the patients are previously reduced by disease (as happens in such cases as we are describing), this constant dribbling of the urine is not without danger, and on these accounts the operation has been laid aside by many practitioners, who prefer puncturing the bladder above the pubis.†

PUNCTURING THE BLADDER ABOVE THE PUBIS.—The operation of puncturing the bladder above the pubis of course can not be performed in cases where the organ is contracted, and the difficulty will be further increased if the person is very fat; but in other instances it can be done with so much ease that it has even been resorted to in many cases when other plans of treatment would have sufficed.‡ Let the young surgeon recollect, that although by drawing off the urine in this way, the stricture will have some little repose, and the surround-

* I would direct my reader's attention to the details of many of these valuable cases which have been published by my friend Mr. Smith, and which will be found in his papers upon stricture, in the "Medical Times" for May, 1850.

† Sir B. Brodie, however, says: "On the whole, from what I have seen, I am inclined to recommend the operation of puncturing the bladder from the rectum; that is, in those cases where the bladder is much distended, and prostate healthy. The operation is simple—free from pain and danger. After the trochar is withdrawn, the canula may be allowed to remain for the next day or two. By the time that the canula is removed, the sides of the wound will have become agglutinated, and it may perhaps continue as a fistulous communication between the bladder and rectum until the stricture is cured."—*Diseases of the Urinary Organs*, p. 40.

Rynal remarks, page 73: "Through some cause or other, it (the operation of peracentesis vesice by the rectum) unquestionably is not a favorite with the Irish practitioner; there are several hospital surgeons here of great experience who have never had an opportunity of witnessing it even once."

‡ Liston observes, "Puncture above the pubis is easily enough performed when the bladder is capacious, but it is at best a dangerous operation. The wound is made through loose cellular tissue; urinary extravasation into the tissue is apt to occur, and proves fatal. If the bowels are inflamed, or

ing parts get into a quiet state, still in the severe cases we are describing the impediment to the course of the urine, depends upon no temporary cause; the natural canal is either turned from its natural course, or its walls are converted into a semi-cartilaginous mass. It is true that this respite from the straining to which the patient has been perhaps subject for some time, will abate, and if either abscess or urinary infiltration has been imminent, it may be prevented, but as far as the stricture itself is concerned, the same difficulties present themselves as before puncture of the bladder; so that the after-treatment will be nearly as difficult as before, excepting the fear of rupture of the urethra. Supposing, then, that the operation is determined on, the distended bladder must be felt for above the pubis, and an incision should be made through the parieties of the abdomen in the median line, a little above the pubis, extending two or three inches in length, down to the bladder. When this organ is exposed, a trochar should be thrust into it, downward and backward, and the urine will pass out, to the great relief of the patient.* In cases of great distention of the bladder, it may become a question whether half the urine only should not be allowed to escape at first—particularly in instances where there is a tendency to syncope, or in persons much reduced—and the remainder allowed to pass out in a short time. The canula should then be plugged, and allowed to remain in for twelve hours; condensation of the surrounding cellular tissue will then have occurred, and infiltration is less to be dreaded; a piece of gum-elastic catheter, mounted on a button, may replace the instrument, to which a little cock may be fixed, and the patient can thus make water when he pleases. Mr Lloyd lately showed me a person whom he had operated upon several years ago, and who is so content with the result, that he will not allow his stricture to be touched, and for a long period he has been passing his water in this way.†

Mr. Stanley possesses also an apparatus which a gentleman, a patient of Mr. Abernethy's, wore for many years; the point of the catheter projecting from the abdomen, was protected by a wire grating, so that the patient could walk about; he likewise would not allow the natural passage to be interfered with; by opening a little stop-cock this patient could relieve his bladder at will, and was in the habit of washing out the organ when necessary, so that he passed the remainder of his days in comparative comfort.

Both these gentlemen consider that the operation above the pubis is the best plan of relieving the bladder. The after-treatment of these severe cases must be guided by general principles, but a free administration of opium, wine, and ammonia, will be usually required, as depression of the vital powers is almost certain to occur.

Before quitting this subject, I would again repeat what I stated at the commencement of this article, that the necessity of puncturing the bladder is daily

evinced a tendency toward inflammatory action, the danger is increased, for a formidable wound is made in the immediate vicinity of the bowels.”—*Elements of Surgery*, p. 143.

Sir B. Brodie states, “If the patient be thin, and the bladder much distended and very prominent in the abdomen, you may very safely puncture it above the pubis; but if the patient be corpulent, this operation will be difficult, and if the bladder be contracted it will be impracticable.”—*Diseases of the Urinary Organs*, p. 39.

* Ferguson observes: “Care should be taken that the peritoneum is above that part where the puncture is about to be made; the upper end of the bladder will be probably greatly distended and prominent in the hypogastric region, and thus beyond risk. There must be danger from the proximity of the serous surface in case of escape of urine into the cavity, or of inflammation: but there may be equal hazard, perhaps, in making the puncture too close to the pubis, for as the bladder contracts, the orifice may sink so much into the pelvis that infiltration may ensue.”—*Practical Surgery*, p. 614.

† Rynd, who mentions that puncture of the bladder, above the pubis, is the plan usually followed in Ireland, says: “The great objection to this operation arises out of the difficulty of preventing the escape of the urine, subsequently, from the wounded bladder, and of procuring an easy channel for its removal from the parts in which it rests; the circumstance of the catheter not completely filling the aperture made by the trochar causes the one, while the position in which the patient is obliged to be, effects the other. Yet patients sometimes, nay, frequently, escape, and the operation, practically, does not present an aspect so very formidable, as reasoning from theory alone would seem to indicate.”

becoming less and less necessary, and in proof of this I can not do better than quote the following passages from two of our greatest surgical authorities.

Sir B. Brodie says: "After all, however necessary it may be to the safety of the patient in some instances, it is an operation that is very rarely required. Surgeons who see a great number of cases of retention of urine, may be called on to perform it in a few instances. Those who perform it frequently, must often perform it unnecessarily, at least this is what I should say, judging from my own experience."—*Diseases of the Urinary Organs*, p. 42.

Liston thought that a catheter could usually be passed in these supposed impermeable strictures, as appears by the following passage: "The operation of puncturing the bladder, in any way, was not once performed in a series of years during which I filled the offices of assistant surgeon and surgeon to the Royal infirmary of Edinburgh, and it has been performed but once, and that before I joined it, at the University College hospital, since it was opened for the reception of patients. The cases of bad urinary disease at these institutions, during this period, have not been few."—*Practical Surgery*, p. 419.

SECTION V.

INFILTRATION OF URINE.

ONE of the immediate consequences of impermeable stricture is rupture of the urethra, and effusion of the urine into the cellular tissue around the canal, which I shall now proceed to describe under the title of infiltration of urine.

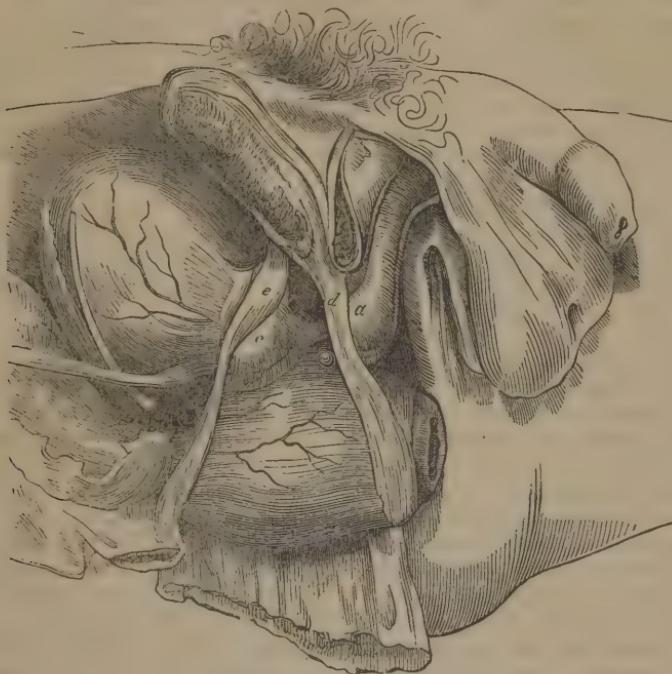
The CAUSES of infiltration of urine depend upon rupture of the wall of the urethra canal in some part of its course, proceeding either from a softened state of the mucous membrane, a consequence of inflammation, (usually of a chronic kind), from rupture or pointing of an abscess, as mentioned in the last section, from rupture due to violence, or to attempts at breaking a chordee.* Most frequently, however, infiltration is due to a bursting of the urethra behind a stricture, depending equally upon a *ramollissement* of the canal at that point, the action of the abdominal muscles, and an hypertrophied bladder.

In a work like the present, my observations will principally apply to this form of infiltration, one which demands the greatest attention on the part of the surgeon, otherwise the life of the patient will be sacrificed.

Before describing the varieties of the different forms of infiltration which are met with in practice, it may be well, perhaps, if I recall to the recollection of some of my readers a few particulars on the surgical anatomy of the perinæum and its fasciæ, directly bearing upon this question, and without which it is impossible properly to treat these cases. No one has more ably treated the fasciæ of the perinæum than my late friend Mr. Morton; he says: "The superficial fascia of the perinæum is situated in the anterior or urethral division of the perineal region, and is a thin membranous layer which conceals the muscles of the penis. On each side the fascia is attached to the borders of the branches of the ischia and ossa pubis; anteriorly it passes forward into the scrotum, where it appears to become continuous with the dartos; posteriorly it is inserted into the inferior surface of the triangular ligament of the urethra, behind the posterior border of the transverse muscles of the perinæum, which it covers. If a small slit be made into this membrane posteriorly, and the extremity of a

* The same effect is stated by Bell to follow the injudicious employment of the armed bougie, and I have myself witnessed similar consequences result from the employment of instruments which divide the stricture. M. Civiale, in his "Traité Pratique sur les Mal. des Org. Gen. Urinaires," states that infiltration follows the lodgment of stones in the urethra, and cites several cases to prove this position.

blow-pipe introduced under it, the air which is introduced will be observed, after distending the perineal portion of the fascia, to pass forward into the scrotum, and diffuse itself into the loose cellular tissue which separates the dartos from the sheath, which the spermatic cords and testicles receive from the margins of the external abdominal rings. If the inflation is continued, the air will, after distending the scrotum, make its way upon the front of the abdomen in the loose cellular tissue which connects the aponeuroses of the external oblique muscle with the superficial fascia of the inguinal and hypogastric regions. It is by following the same course that the urine, which is sometimes extrav-



Lateral View of the Fasciae of the Perineum.

a. Bulb of the urethra; *b.* Membranous portion of the urethra; *c.* Prostatic portion; *d.* Triangular ligament; *e.* Pelvic fasciae.

sated underneath this fascia by a rupture of the anterior part of the urethra, is seen to make its way along the perineum into the scrotum, and even upon the anterior and lateral parts of the abdominal parietes." — *Morton on the Perineum*, page 12.

Should rupture of the spongy portion of the urethra take place behind the superficial fascia, the urine will be enclosed between it in front and the triangular ligament behind, the attachments of which are shown in the preceding wood-cut. Rupture of the urethra, however, may take place in the membranous portion of the urethra, behind the triangular ligament; in this case the urine will become infiltrated in the space between *d* and *e*, seen in the preceding wood-cut taken from *Morton*, p. 28.

In case rupture of the urethra takes place at the membranous portion, the urine will be prevented from passing forward by the triangular ligament; below, above, and behind, in consequence of the attachments of the pelvic fascia. Thus shut in, the water will form a tense hard swelling in the perineum where it will point, and its exit will be principally opposed by the triangular liga-

ment, a structure which resists the passage of urine, until sloughing is produced.

SYMPOMS.—The patient, who has been long laboring under difficulty in making water, may, during one of the efforts to pass his urine, suddenly feel something give way, and is surprised that no water passes by the urethra; at first, relief is obtained if the bladder is very much distended, soon, however, severe pain is felt in the perineum, the patient becomes feverish and anxious, and his alarm is increased by his observing swelling and redness of the perineum, scrotum, or penis; to the finger these structures first feel hard and tense, a dusky blush soon follows, and the skin, which becomes quaggy and crepitant, appears on the point of sloughing; the pulse, at first full and rapid, soon becomes feeble, intermitting, and irritable, the tongue is dry and cracked, the countenance altered, and typhoid symptoms set in with remarkable violence.

Provided no treatment is resorted to, the symptoms become more aggravated; the skin and cellular tissue assume a dark color, and gangrene follows; large pieces of mortified structures become detached, and the bones, aponeuroses, and muscles are exposed. Desault speaks of cases in which he has seen the whole of the skin of the scrotum, that of the perineum, and the upper part of the thighs, come away, leaving the testicles floating in the midst of this immense ulcer. The patient sinks under this fearful complaint, either breathing his last in the midst of convulsions, or, what is more common, he falls into a state of stupor, rapidly followed by death.

DIAGNOSIS.—It may appear futile for a surgeon to devote a paragraph to the diagnosis of infiltration of urine, but in practice cases occur which prove that this is not always so easy as may be imagined. When we have the symptoms above spoken of present, it is not a difficult thing to say that we have to treat effusion of urine. I lately saw a person on whose perineum a horse had fallen, and rupture of the bladder or urethra was dreaded. On the morning after the accident a bluish tinge appeared on the lower part of the abdomen, and infiltration of urine was supposed to exist, but the lesion proved to be only ecchymosis.

It may not be uninteresting to inquire, if in practice we can say, before cutting into the infiltrated tissues, whether the spongy portion or the membranous part of the urethra has given way, and this is of the greatest importance, as our treatment might be different according as one or the other portion had been ruptured.

In the former edition of this work, I stated, "Now although anatomical considerations might induce the surgeon to believe that the infiltration would differ in the direction it takes, as rupture of the urethra occurs in one or other part, practice does not always bear out the theory, and the extent and rapidity of infiltration seem often rather to depend upon the size of the rupture, upon the resistance of the aponeuroses, and the contraction of the bladder, than upon any other circumstance; and this, perhaps, is less surprising, when we consider that in almost all these cases the natural texture of the parts is much modified by long-standing disease." Subsequent experience, however, induces me to believe that an observant surgeon may often be able to distinguish at what part the urethra has given way, and the means by which I have or think I have, arrived at a correct diagnosis are the following:—

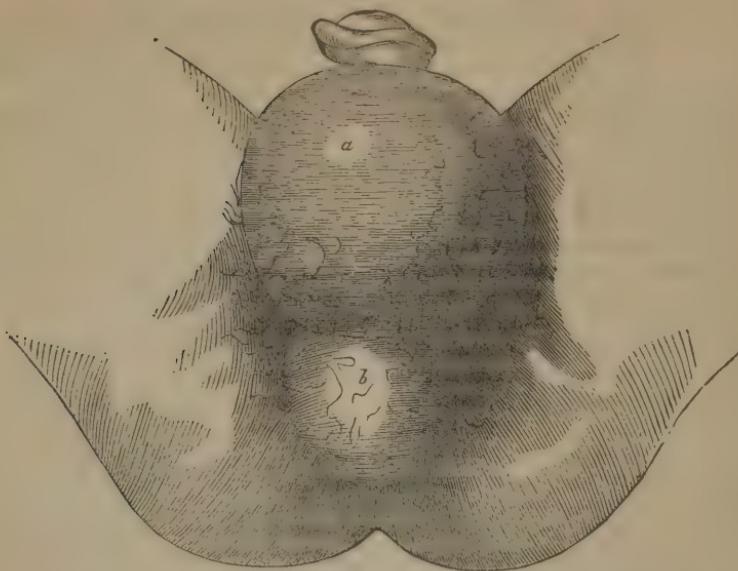
Infiltration of urine from rupture of the spongy portion of the urethra, should be denoted by a thickening rather than swelling in the anterior portion of the perineum (from the urine not being able to pass backward, in consequence of the triangular ligament), followed by enlargement of the penis and scrotum; there may also be infiltration upon the abdomen above the pubis. In many instances these symptoms may be noticed.

In consequence of the little tension of the superficial fascia, the enlargement

in the perinæum will not be great, and the surgeon will perceive rather a pitting and quaggy state of the perinæum, than a distinct swelling. On cutting into this form of infiltration, a distinct abscess will not be found if the case is seen early, but the finger passed up will discover the ruptured urethra. In consequence, however, of previous disease, which has altered the natural structures of the perinæum, rupture of the anterior portion of the urethra will give rise to various modifications in the course of the infiltrated urine; this will occur particularly when abscess has formed around the canal, and the walls of the abscess containing pus and urine have given way subsequently. A tense swelling will then be found in the anterior portion of the perinæum. The scrotum may become œdematosus, but no urinary infiltration will take place, in consequence, probably, of the existence of old disease. In a case I lately witnessed, there was a tumor in the anterior part of the perinæum attached to the spongy portion of the urethra, but no swelling of the scrotum or penis, the urine having passed up to the abdominal parietes, which, on being incised, allowed the escape of the fluid, and sloughing subsequently followed; the finger and probe could be passed BEHIND the pubis, and communicated with the swelling in the perinæum, thus forming a mixed case, in which it was difficult to say where the rupture had taken place, and contradicting all the anatomical relations given above. It is, however, highly important for the surgeon to be acquainted with the natural and exceptional relations of these fasciæ. Observation has taught me that the diagnosis of rupture of the spongy portion of the urethra may be assisted, by considering the time that has elapsed between the period when the bladder was last relieved and the present symptoms. I am induced to think that when the spongy portion gives way, the symptoms of infiltration, that is to say, the swelling of the scrotum and abdomen, occur at once, as the urine has no barrier to impede its egress; not so when the deep-seated fasciæ check its progress forward. The constitutional symptoms are likewise not so severe in the former case as when the effusion takes place behind the deep fasciæ.

I should be inclined to diagnose rupture of the membranous portion of the urethra, when I found, together with severe constitutional symptoms, a firm tense swelling, pointing in the perinæum, as shown in the woodcut on p. 118, taken from a patient who was brought into St. Bartholomew's hospital, under the care of Mr. Stanley, during the last winter. And I should be further borne out in this supposition, if the swelling had appeared twenty-four hours or more after the first symptoms of rupture of the canal. In such a case as this, however, the diagnosis is at once cleared up by an incision into the tumor; a free exit being given to the pus and urine, the finger may, when passed deeply down, give evidence of the situation of the rupture.

THE TREATMENT.—The young surgeon, when called to these cases, had better obtain the assistance of a colleague, for the responsibility attached to them is very great. I should advise that the patient be brought before a good light, so that every possible advantage be obtained from a thorough investigation of the case, which will be very necessary in the subsequent proceedings. The patient should be likewise placed on an operating table or laid on some elevated flat surface, so that in any operation the surgeon should not have occasion to stoop. In cases of infiltration the practitioner can not, as in impermeable stricture, have recourse to opium, warm-baths, or purgatives: he has, in the former case, only two objects in view—to relieve the distended bladder, and by free incision to allow the cellular tissue to disembarrass itself of the effused urine. Probably attempts have been made to pass a catheter. I should always recommend the practitioner to try to pass an instrument when the patient is placed before a good light or on the operating table. Should the catheter pass, the urine will flow, to the great relief of the patient, and the instrument may be left



Swelling caused by Infiltration of Urine behind the Triangular Ligament.

a Represents the scrotum distended with serum, and which afterward sloughed away.

b Is the defined swelling in the perinæum, from which, on being incised, issued urine mixed with fetid matter.

in the bladder, as in cases of impermeable stricture, and free incisions must now be made into the infiltrated tissues. The number, depth, and direction of the incisions must depend upon the circumstances of each particular case, and care must be taken to leave a free passage for the urine, otherwise a second train of symptoms may arise. M. Civiale, in his valuable treatise above alluded to, states that young practitioners too often fall into the error of not cutting the infiltrated parts sufficiently deep; for, says he, the swelling is considerable, and, on its abatement, the surgeon will be surprised to find how superficial have been his supposed extensive incisions.

Another grave error which I have seen committed consists in the disinclination to cut into the perinæum, and give a free exit to the contents of a swelling in that position, when the infiltration of urine is slight, and a catheter can be passed and the urine drawn off. The reader will best see the consequences by a brief detail of a case.

A man for some years had been suffering under bad stricture, within the last three days the urine had passed only guttatum; he was brought into hospital with a distended bladder, a small circumscribed swelling in the perinæum, with inflammatory œdema above the pubis on the left side. A catheter could not be introduced, and only a tablespoonful of urine passed in the warm bath. The man was put upon the operating-table with the intention of cutting into the perinæum, but at the suggestion of a colleague, a catheter was passed, the patient being under the influence of chloroform, and three pints of urine drawn off; two incisions were made in the inflamed cellular tissue above the pubis, and the tumor in the perinæum was left alone, a catheter being left in the bladder. The patient was relieved, but in twenty-four hours, as the sloughs were enlarging above the pubis, it was thought advisable to cut down upon the tumor in the perinæum, which had increased in size, and from which, offensive pus and urine now gushed out; a free communication was found to exist be-

tween the incisions above the pubis and the perinæum, proving that in the first instance the perinæum ought to have been opened, and a free exit given to the infiltration. Let the young surgeon profit by this case, and freely cut down at once in cases where he has good reason to think that urine is effused.

The after-treatment is very simple :—opiates, wine, ammonia, warm fomentations or poultices, daily examination to guard against the urine burrowing in any direction, will be necessary ; during the first few days the urine will be continually dribbling away, and care must be taken to change frequently the sheet on which the patient lies ; this adds considerably to the comfort of the patient, and prevents bed-sores, erysipelas, and their sequelæ ; subsequently the patient will generally have control over his water. In proportion as the structures get into a healthy state, and as complete cicatrization is taking place, part of the urine will often pass by the natural passage, and the immense chasm in the perinæum gradually closes. Up to this moment the surgeon should not interfere with the urethra ;* now, however, he will do well to pass a catheter down the urethra so as to dilate the passage, and, on a subsequent occasion, he may be able to get an instrument into the bladder, where it should be kept, and the case treated as one of fistula in perinæo ; and if the patient have no disease of the kidneys or other constitutional affection, recovery may be anticipated.

In the class of cases of infiltration just cited, the surgeon has been able to pass an instrument ; it not unfrequently happens, however, that the best operator will be unable to get a catheter into the patient's bladder. The instrument is obstructed in the spongy portion of the urethra ; in such a case it is best to withdraw the catheter, and pass a grooved sound down to the obstruction, and, placing the patient in the position for lithotomy, cut freely down upon the sound. If the finger be now introduced into the incision, the urethra will probably be found torn, and the tissues unhealthy, but no distinct abscess or urinary dépôt detected : the cause of the infiltration will be thus at once laid bare. In this case it does not follow that the urine should flow through the wound ; the bladder being very much distended, rises in the abdomen, and has ceased perhaps to contract, or the prostate probably is enlarged, and thus a valve is placed on the opening, the urine only dribbling out of the wound. The incision in the perinæum does not relieve the bladder ; it only gives an exit to some portion of the infiltrated tissues, and stops the further effusion of urine. Some persons have recommended the patient to be then put to bed ; and opium has been prescribed, in the hope that the bladder would after a time act. Taking into consideration the cause of the retention, that other strictures probably exist, that the prostate may likewise be enlarged, and the fear of rupture of the bladder, I should scarcely ever think it advisable to wait, but have recourse at once to some plan for relieving the bladder. If the finger, passed into the wound, detects no burrowing of the urine backward, the surgeon may believe that the spongy portion of the urethra has alone given way ; and as only a small incision has yet been made, I should not further interfere with the wound, but puncture the bladder either through the abdomen or by the rectum. I would not extend the incision to the bladder through the perinæum. Persons who have not seen this operation attempted, may think it a very easy matter to cut their way into the bladder ; but when I state that the bladder is often drawn up out of its usual

* M. Rynd recommends the patient to be placed on a table within a few days after cutting into the perinæum, and a gum-elastic catheter to be passed down the urethra, until an inch or two of its extremity comes through the rent ; then, desiring the patient to make water, the surgeon should watch the spot whence it issues, pass a probe, and subsequently turn up the beak of the instrument along the probe into the bladder.

At St. Bartholemew's hospital a catheter is not attempted to be passed from the opening in perinæo into the bladder, until the stream of urine is diminishing. Mr. Bransby Cooper, in the Guy's Hospital Reports, vol. v., p. 253, *et seqq.*, recommends this always to be done, and cites cases in which that practice was pursued.

situation, that the prostate is frequently found enlarged, that all the surrounding tissues are found indurated to so great an extent that most severe hemorrhage ensues in consequence of the vessels not contracting, and that every ounce of blood is of value to persons worn down by old urinary disease, I think I have said enough to induce the surgeon to pause before he cuts his way from the perineum to the bladder.

More frequently, however, when the surgeon has cut down upon the staff, or when he has opened the perineum, a gush of very offensive matter, followed by urine, will take place. If the urine continues to pass off, the patient should be left to recover himself; and at first the water will dribble continually away. Stimulants, opium, and changing the sheet on which the patient lies, constitute all that is requisite, and the after-treatment resembles that previously spoken of. In a few days the patient will be able to retain his water, but the greater portion will pass through the opening in the perineum. By degrees more will pass through the canal; and now a catheter may be introduced, and the case treated as one of fistula in perineo.

SECTION VI.

FISTULOUS OPENINGS.

In private practice, we are most frequently called upon to treat fistulæ of the urethra just below the glans penis, in consequence of abscess in the urethra, which has been badly managed, or been caused by inattention on the part of the patient. As a consequence, the urine dribbles through and wets the mucous membrane between the glans and prepuce, producing considerable irritation. Fistulæ not unfrequently occur in this situation from sloughing phagedæna, which has not been controlled until it has eaten its way into the urethra, thus leaving a fistulous opening which gives the patient considerable annoyance.

In these cases the fistulous opening may be very small, not large enough to admit a pin's head, and the course of the fistula may not be direct.

I have tried a variety of means of closing these little fistulæ; the best, however, consists in placing the smallest possible quantity of Vienna paste in the external opening: a little slough forms, blocking up the fistula, and cicatrization follows in the course of a few days; or, it may be necessary to re-apply the caustic, on each occasion employing less and less of the paste. I have lately obtained some most successful results from this treatment.

In hospital and dispensary practice, the cases that present themselves are far more serious, and deserve the careful attention of the practitioner. "Fistulous openings," says M. Ricord, "may occur in any portion of the perineum or urethra. They may be complete or incomplete; that is to say, they may terminate in an abscess, or on the surface of the skin. Internally, they have usually only one opening; externally, they may present several. Their direction may be variable. When they open into the bladder, the urine will escape as fast as it is secreted; we shall therefore perceive a constant dribbling from the fistula. When, on the contrary, the internal opening is beyond the neck of the bladder, the urine will escape only when the patient attempts to make water. There are, however, certain circumstances which may lead the surgeon astray, viz., when the internal opening is close to the neck of the bladder, and that organ contains but little urine, the fluid accumulated in the lower part will only be passed during the involuntary contractions of that organ. Various pouches in the course of the fistula, as well as communications between the vagina or

rectum, may likewise impede the exit of the urine. When the urinary fistulæ open into the rectum, urine will be passed only when the patient goes to stool; however, the presence of the urine will so far irritate the rectum as to give rise to tenesmus, which is very severe and constant. The more numerous the fistulæ, the greater will be the alteration of the tissues submitted to the action of the urine; the skin becomes thin and detached; ulcerations form, or else induration or horny degeneration ensues. Gangrene, also, will destroy the cellular tissues in all cases where adhesive inflammation does not form a check to the passage of the urine. The aponeurotic layers themselves may give way; the bones in the neighborhood may become exposed, carious, or necrosed; and, lastly, the surrounding tissues may undergo a degeneration, and be converted into a cancerous or fungoid mass. As long as any obstacle to the free passage of urine by the urethra exists, the fistulous openings will evince but slight tendency to close; from the moment, however, that the canal becomes free, the cure of the fistulous openings will be speedy, and proportionate to their short duration. This, therefore, becomes a point of importance in regard to the prognosis, as recent fistulous openings are not provided with those false mucous membranes which are found organized in cases of old standing.

The temporary employment of bougies is frequently alone sufficient to cure fistulous openings. In proportion as the calibre of the urethra is re-established, the urine passes in less quantity by the fistulous opening, and a cure speedily takes place. But this treatment is not one which succeeds so well or so often as some others. A great number of fistulous openings do not yield, and it becomes, therefore, necessary to keep a catheter permanently in the bladder. In addition to these precautions, a surgeon should take care to give the urethra its proper calibre; he should, in addition, provide against the urine passing through the fistulous opening. This, however, is not always easy, as urine will pass between the walls of the canal and the bougie, and thus reach the fistulous opening, or do so when the instruments are removed in order that the patient may make water. The greater number of surgeons show a preference to catheters which are left open, and which, without injuring the canal, fill it so completely that the urine, finding easy and constant egress, does not escape through the fistulous opening.

When, however, a certain degree of dilatation has been obtained, or if this has been too great, we should, as Dupuytren so justly observed, prevent cicatrization of the internal orifice by keeping its borders separated; and the cure is only obtained by gradually returning to the employment of similar instruments, or altogether laying aside their use.

In some cases it has been recommended to attach a piece of sponge to the point of the catheter, as it was supposed that such means would more effectually tend to empty the bladder; more recently, a piece of thread passed through the eye of the instrument has been supposed capable of the same effect, acting by capillary attraction. Other plans have been recommended, but they do not present sufficient practical advantages to induce us to dwell upon them. When the surgeon leaves an open catheter permanently in the bladder, he should, to a certain extent, oppose the free passage of air by means of an empty bladder attached to the distal extremity of the instrument.

Catheters, however, sometimes irritate the portions of the canal which they touch, and occasion inflammation and suppuration; in such cases the persistence in the use of instruments, far from ameliorating the disease, only tends to aggravate it, or keeps it up by the passage of the pus through the fistulous openings.

Under such circumstances the treatment must be laid aside altogether until the unfavorable symptoms have passed away, or it should be only employed at intervals, so as to keep up the improvement which has been made.

The fistulous openings must, however, be attended to; when they are lined with a false membrane, it will be usually necessary to employ the knife, and incise them like fistulae in other parts of the body, that their parietes may cicatrize.* But this treatment should not be employed until catheterism has failed.

In employing cauterization in these cases, care should be taken to destroy the internal opening and the deeper portions, as well as the external orifice of the fistula. I have succeeded, by cauterizing the urethra at the point of the stricture, or behind it, in reaching the internal opening, and I have injected the fistula with a solution of nitrate of silver, containing forty grains of the salt to an ounce of water. In cases where the fistulous passage is sufficiently large, I have introduced a conductor containing solid nitrate of silver; in other instances I have employed a stilette surrounded with lint dipped in nitric acid. I have sometimes obtained good results from the employment of the actual cautery; this, however, is only applicable when the passages are short and direct.

A great number of fistulous openings, which are placed in front of the scrotum, or on various points of the spongy portion of the urethra, resist all the means we have yet spoken of. Some of these fistulae consist in simple apertures, which it is almost impossible to feel between the skin and the canal. On the contrary, in other cases there is a complete loss of substance, forming a species of *hypospadias*: to these the term of fistula no longer applied, as one opening only exists, there being no fistulous passage. To judge of the difficulty of curing these cases, the surgeon should have them under his own care; the difficulties arise from the slight thickness of the cellular tissue, which is very loose in this situation, and from the interruption to the process of cicatrization presented by the variation of the size of the penis in its distended and relaxed state.

In three patients at the Venereal hospital I tried that form of suture recommended by my learned friend M. Dieffenbach, which consists in passing a thread round the fistula at the spongy portion of the urethra, and then drawing its ends together between the skin and the canal. In these three cases the operation has failed, although performed with the greatest precautions. Two of these patients have been operated upon three times, and the third has had the ligature applied twice. At each new trial I employed some fresh modification, without, however, gaining my end. In one instance the passage was sprinkled with the tincture of cantharides; in another, it was touched with nitric acid and caustic. Once I kept an open catheter permanently in the bladder; on another occasion I allowed the catheter only to be opened when the patient felt a desire to make water; and in a third attempt I left the canal free, but with no better success.†

It is well known that little success has attended the attempts of surgeons to remedy the various degrees of *hypospadias*; the results have been similar in the attempts to apply them to the accidental loss of parts. In the case of a patient who had lost two thirds of the inferior portion of the spongy part of the urethra between the scrotum and prostate, and upon whom M. Breschet had previously unsuccessfully employed two sutures, I failed likewise in obtaining any benefit, although I tried one of the plans recommended by M. Dieffenbach, which consists in dissecting the skin on either side of the abnormal opening, to a certain extent, and bringing the flaps nearly together by means of strips of plaster, having previously trimmed the edges. I had recourse also in the

* Rynd recommends free and extensive incision of the orifices of fistulous passages, in the belief that their continuance depends upon the retention of matter, and not simply on the passage of pus through them.

† Since the above was written, M. Ricord has succeeded in curing the last-mentioned patient by this method.

same patient, to *urethro-plastie*, performed at the expense of a flap of skin taken from the scrotum; but in this case the operation partially failed, union not taking place to the extent of a third of the opening, and this in consequence of a circumstance which it is important to mention, namely, that at this point the border of the flap was ecchymosed at the time of union. The other operations, I think, have not hitherto been sufficiently tried.

SECTION VII.

FALSE PASSAGES.

The following article is a simple translation of a note by M. Ricord, on the subject of false passages, in the French edition of Hunter's works. As it is complete in itself, and as few English authors have written upon the subject, I prefer giving it in the words of the French professor.

"Every point of the urethra may become the seat of false passages, and we may meet with them throughout the whole course of the canal. The fixed points, as well as the moveable ones, present frequent examples. It is certain, however, that false passages occur most frequently in the curved portion of the canal, particularly in the membranous, but they are met with in the prostatic portion, in the substance of the prostate itself, and at the neck of the bladder. Although they arise at the inferior border, still they may be seen at any point of the circumference of the canal of the urethra. They are of various dimensions, and may terminate in some neighboring organ, such as the rectum; or, after having passed through a certain thickness of tissue, they may enter the bladder, either by its anterior wall, or, as happens most frequently after passing through a portion of the canal, placed behind the stricture, or in the body of the prostate; or still again behind that organ, by penetrating its lateral lobes, or the fundus of the bladder, in which case the instrument passes between that organ and the rectum, or reaches the former, having previously entered and passed again out of the intestine, as in an example mentioned by Deschamps."

CAUSES.—There are numerous circumstances which predispose to the formation of false passages; thus, in addition to the situation of the stricture, the greater or less resistance of the diseased parts, the various directions which the urethra has assumed in consequence of abnormal or pathological states of the prostate, the accumulation of faecal matter in the rectum, will in deep-seated strictures tend to their formation. We must likewise consider as predisposing causes, the nature of the stricture itself, as well as the state of the surrounding parts, the kind of instrument employed to combat or pass strictures, and lastly, the greater or less care used by the practitioner.

False passages are more to be dreaded, in proportion as a stricture is firm, callous, resisting, and little dilatable. The narrower the strictured passage, the more have we to fear the occurrence of this accident, particularly when the stricture is of considerable length, and when several are present; as the most anterior one necessarily interferes with the treatment or proper direction to be given to the instrument. Should the mucous membrane be subject to chronic inflammation, or should it be affected with *ramollissement*, perforations are very frequent, and it is not necessary that the softening should be very well marked.

The kind of instruments employed has a great influence on false passages. The flexible ones produce them rarely, while the use of inflexible bougies often creates them. The size of instruments also should bear a proportion to the stricture. Still in those cases which depend upon an hypertrophied state of the mucous membrane, or where spasm is present, it is better to employ

bougies of a large size. As a general rule, however, the more the diameter of the catheter diminishes, the greater chance there is of the occurrence of a false passage. Straight and inflexible instruments employed in strictures, situated posteriorly to the bulb, have been frequently the cause of these accidents.

Allowing that instruments are more liable to produce false passages, in proportion as they are more pointed, as in the instance of conical bougies, the use of which has been too much condemned, still the lesions they produce are less severe than those which result from the employment of instruments of a larger size, and whose volume bears no relation to the strictured part. In fact, in the one case we have only a simple perforation, or a species of acupuncture; whereas, in the other a rent occurs of a considerable extent, together with a tearing away of the edges themselves. Pressure on the anterior part of the canal, as recommended by Hunter, and cauterization, as well as the operations we have previously described, may cause these perforations.

In fine, the most frequent cause of false passages, perhaps, exists in the hand which directs the instrument. A want of anatomical knowledge and practical skill, or too great haste, has often been the cause of accidents which might easily have been avoided, independently of the existence of other predisposing causes.

To avoid false passages, let the surgeon hold the bougie as short as possible, in order that he may more effectually be able to appreciate the obstacles which he has to overcome, and the direction the instrument should take; let him draw the penis toward the instrument, in order that tension may be exerted on it, and thus obliterate the *cul de sac* which is frequently seated in front of the stricture. Let him follow externally the direction given to the bougie while it passes the perineum; let him introduce his finger into the rectum to guide the instrument as it passes along the prostatic portion, and take care that it does not deviate on either side; let him employ less force in proportion as the instrument passes with difficulty, and only push it forward when he has assured himself that the point is in the stricture.

Such are the directions for introducing the instrument in difficult cases, which, if attended to, and followed up by a judicious selection of bougies, will tend to the prevention of those accidents which unfortunately are of too common occurrence, particularly when ignorance is joined with a desire of display by rapidity of execution.

The SYMPTOMS of a false passage consist of various ill effects which the patient experiences after the passage of an instrument. Among others, authors have enumerated haemorrhage. This symptom is of little value. There are many patients whose urethra bleeds very easily without the occurrence of a false passage. In some cases bleeding results from a *ramollissement* of the mucous membrane. On the other hand, a false passage may happen without the occurrence of haemorrhage, an instance of which M. Ricord mentions in his lectures, of an old man who had a very severe stricture, of the callous form: several ineffectual attempts to pass an instrument were made by a practitioner, and the spectators were not a little surprised, in one of these attempts, to observe the point of the instrument protruding beneath the skin near the ischium. No bleeding followed in this case, and yet no doubt can exist that a false passage was made.

Various sensations on the part of the patient are of an equally doubtful nature. Some patients exaggerate their sufferings, declaring that they feel the point of the instrument pricking them, particularly at the fossa navicularis, at the bulb and at the neck of the bladder—circumstances which lead to the belief that these lesions occur where none exist. Other patients, on the contrary, suffer less than might be expected, and the instrument may penetrate the walls of the urethra without the patient being sensible of it. Nevertheless, when a

patient feels a sense of tearing or of pricking, it is an additional reason for the surgeon to be more careful than usual. Generally speaking, patients suffer more when the bougie passes by a false opening than when it enters the stricture; the sensibility of the latter is not so great as has been represented. Be this as it may, it is likewise certain that a bougie, once in the false passage, remains there with less pain than when it is introduced and left in the stricture.

With respect to the resistance felt, it has been remarked that in the majority of cases the sound parts resist less than the morbid, and the surgeon may in many cases be deceived by the facility with which his instrument passes. That sensation of tearing, which the patient and surgeon both feel, may depend upon the rupture of one of those bridles of mucous membrane above spoken of, or a sudden abrasion of the strictured part, as well as a rupture of the parts in front. Nevertheless, when we have once entered a strictured orifice, the instrument is felt as if firmly grasped—a circumstance which never happens when a false passage has been made.

The absolute direction of the instrument in relation to the axis of the urethra, the possibility or not of executing rotatory movements with curved instruments, supposing them to be in the bladder, the fact of urine passing out by the catheter, when this instrument is employed, are symptoms upon which but little dependence can be placed.* Indeed, a false passage may be made when the axis of the urethra is closely followed, and the instrument may reach the bladder by one of those routes of which we have above spoken, without the surgeon being cognizant of it, unless it is by the occurrence of certain symptoms which, fortunately for the patient, do not always follow. On the other hand, without having deviated from the ordinary passage, the instrument, embraced tightly by the stricture, and shackled by a bladder which from thickening of its walls has become diminished in size, may give the surgeon an impression that it is taking a wrong direction, particularly if the eye of the instrument be momentarily blocked up by mucus or blood, thus preventing the passage of the urine. In addition to the signs above given, we may add that little value can be placed on the impressions of the *porte empreinte* of Ducamp, or on wax bougies. The same observations apply to the finger introduced per anum, and particularly the greater or less degree of tightness with which the instrument is held.

SYMPOTMS.—The accidents which follow as a consequence of false passages are not so severe as some authors, especially Hunter, have stated.

As long as patients can empty their bladder, and no retention of urine exists, and when the false passage has been made with an instrument of small dimensions, or the lesion only exists between the bladder and the stricture, a false passage is to be considered as a circumstance of little importance, and one which may pass without the patient or the surgeon paying any attention to it; such, in fact, occurred in the case above mentioned as having been seen by M. Ricord. It is sufficient, when we are aware of the existence of a false passage, to allow our patient to remain quiet some days, without having recourse to a fresh introduction of instruments. The parts consequently cicatrize; the stream of urine, from the position and direction of the false passage, tends rather to bring together the walls of the latter than to introduce itself into it, except in cases where the lesion is made from behind forward, as may occur when a bougie turns upon itself, and makes a false passage in front of the stricture.

* Many surgeons have a belief that a to-and-fro movement of the catheter proves that the instrument is in the bladder, and that the absence of water in the viscus is the reason why it does not issue from the catheter. Both these assumptions can be often proved to be incorrect. When a silver catheter has been introduced sufficiently far to enter the bladder, I have seen surgeons often cause it to make a half-circle, and state that it is the walls of the flaccid bladder which impede its further action, and that as the eye of the catheter is blocked up, no urine can flow. Let a stilette be passed in and out, and let the finger be introduced by the rectum, when any mistake may be rectified. Too frequently it will be found that the instrument is in a false passage. If withdrawn, and a catheter with a large curve be used, it often happens that urine passes off readily, to the surprise of the surgeon and his *admirabiles*.

In cases where the parts are forcibly torn, or where the employment of large sounds has produced abrasions, or caustic has destroyed the tissue, severe inflammatory accidents may arise, which may be of either a local or sympathetic nature. But as long as a false passage has not been brought into communication with the bladder, either through the means of the instrument which has produced it, or through consecutive ulceration, provided the patient can still make water, we may, by waiting and taking proper measures to combat the accidents, rationally hope to cure our patient. It is only in cases of extensive lacerations, accompanied with a complete retention of urine, and which call for an immediate relief of the bladder by the catheter, or in those instances where the false passage communicates with the bladder or the rectum, that we have to expect the most serious consequences, and which call upon the surgeon either to puncture the bladder, or to combat those ill effects which result from the infiltration of urine. There are cases in which a false passage having been made, and the instrument having reached the bladder, everything goes on quietly, and shortly a new canal, provided with a false mucous membrane, results. In every case where there exists a false passage, the surgeon should recollect in what direction it has been made, and assure himself further of its existence by the *porte empreinte*; the exact situation of it should be ascertained—in cases where it has been caused by another surgeon—in order that our instruments may have a proper direction given to them, and that we may not fall into the same error.

As regards the TREATMENT, I have but few words to say. It is indicated by what has already been stated. In slight cases, we should withdraw the bougie, and wait till the parts have healed; in more severe cases, every endeavor must be made to introduce a catheter, which should be left in the bladder. If the introduction of an instrument be impossible, M. Ricord states that he is not certain whether he would not make a false passage directly into the bladder, rather than perform the operation above the pubis, to relieve that organ, for we must resort to one or the other alternative.

SECTION VIII.

AFFECTIONS OF THE PROSTATE GLAND.

ACUTE and sub-acute idiopathic inflammation of this gland are very uncommon; they usually arise from, or are a consequence of, gonorrhœa. The importance of the disease is such, that I shall first copy the description from a lecture of M. Ricord, and then state my own opinions upon the subject.

RICORD'S DESCRIPTION.

"INFLAMMATION OF THE PROSTATE GLAND AND VESICULÆ SEMINALES.—This is a rare complication, depending either on too great intensity of the inflammatory symptoms, or on faults committed during the time the patient is under treatment. When the prostate is affected, all the symptoms become aggravated. There is augmentation of the perineal pain, throbbing, difficult and painful micturition, or retention of urine, a tendency to constipation, with pain on going to stool, particularly when faecal matter passes. When the patients attempt to sit down, if they cross their legs, the pain becomes intense, constituting symptoms of inflammation of the prostate. It has been said that a deep indentation on the upper part of the faecal mass (which it has been asserted is caused by the impression of the enlarged prostate in the rectum) is one of the

symptoms of the disease; this mark, however, would be impressed on the semi-solid motion at the time that it passes the prostate, and those who advance this symptom seem to forget that the faecal mass has subsequently to pass the anus, a portion of the rectum much smaller than that opposite the prostate—consequently any impression made by the prostate must be effaced.* Examination with the finger introduced into the rectum is of great service in the diagnosis: it may determine the degree of swelling of the organ, and whether fluctuation exists, should either be suspected. When one of its lobes, or a part only of one of its lobes, participates in the inflammation, the enlargement will be irregular. Sometimes the inflammation only passes along the prostate to attack the vesiculae seminales: in these cases the enlargement is further separated from the median line, the generative functions take on increased activity, and the patients complain of very painful nocturnal emissions. It is important to be acquainted with these distinctions, for, when inflamed, the vesiculae seminales present a feeling of distension, which might easily be mistaken for fluctuation. The surgeon can easily conceive the danger that would result should an incision be made into these organs. The inflammation of the prostate and vesiculae is followed by very severe local symptoms, but is not always attended with general reaction; sometimes vomiting, constipation, a tympanitic state, together with nervous symptoms, may arise, accompanied with fever. In some instances, I have seen the inflammation extend to the sub-peritoneal cellular tissue, and attack the peritoneum itself. Abscess in the prostate may open into the rectum, the pus generally escaping with the motion. In the majority of cases the pus points in the direction of the urethra or bladder, in front or behind the neck of that organ. If into the bladder, pus can only be detected when the patients make water. If, on the contrary, the abscess empties itself into the urethra, the discharge takes place suddenly at the moment the spontaneous bursting into the canal occurs, and at intervals between the times at which the patients pass their urine. Both these modes of opening of prostatic abscesses may be attended with urinary fistulae; but should the abscess empty itself into the rectum, a fistulous opening is not to be dreaded. We shall see, in speaking of treatment, that it is best to give issue to the matter as soon after its formation as possible."—*Gazette des Hopitaux*, 1847; p. 512.

e, Position of the Prostate Gland.



AUTHOR'S DESCRIPTION.

ACUTE INFLAMMATION OF THE PROSTATE GLAND.—In the previous edition, I spoke of this affection as of rare occurrence; subsequent experience has made me more familiar with the disease, and the surgeon who meets with such cases for the first time, will be astonished at their severity, duration, and consequences.

As uncomplicated cases are rare, I shall transcribe one from my notebook.

* The value of the riband-shaped faecal mass is therefore doubtful as a symptom of prostatic affection.—W. A.

SYMPOTMS.—F. F., about twenty-five, a bookbinder by trade, came to me at the Islington dispensary, suffering severe pain in the perineum, shooting down the course of the left sciatic nerve; when my patient makes water the pain is increased to an intense degree; this pain does not extend along the canal, but to employ the patient's expression, appears confined to the fundament. The suffering is so intense, that the patient, while making water in my presence, was compelled once or twice to press the glans penis, in the hope of diminishing the stream. I may mention that he is not called upon to make water more frequently than usual. The bladder, at the time of my first examination, held from six to eight ounces of urine, which produced pain only while it passed the prostate, but a dull aching sensation was felt for some time after in the perineum. Soon after the effort of making water, and before he left me, my patient was seized with cold shivering; this is the second time it has occurred since yesterday. At the present moment there is no discharge from the urethra. The bowels have been confined since yesterday. On introducing the finger per rectum, pressure on the prostate produced increased pain, but I could detect no increase in the size of the organ, nor heat of the part. The constitutional disturbance was considerable.

HISTORY.—This patient contracted gonorrhœa about a fortnight before; five days since, he took aperient medicine freely, and the present symptoms gradually increase; is quite certain he has taken no other medicine; walks some distance to his work.

It is not often that we meet with these uncomplicated cases, but their study is important, as it enables us to detect the disease more readily, and distinguish this affection from inflammation of the neck of the bladder, with which, I believe, it is often confounded, as they frequently occur together. The young surgeon should recollect in the

DIAGNOSIS OF ACUTE INFLAMMATION OF THE PROSTATE, that the pain in the perineum is increased on making water, lasting some minutes after the urine has passed. But the patient is not frequently called upon to pass urine; he will put off the operation as long as possible from dread of the pain. In the diagnosis of acute inflammation of the neck of the bladder, on the contrary, the surgeon's opinion will be founded on the fact, that the patient is constantly called on to relieve the bladder, small quantities of urine only passing at a time, to the great relief of the patient, until the fluid again collects in the organ, when the pain recurs, and the same relief is expressed after its expulsion.

THE USUAL COURSE of acute inflammation of the prostate is as follows. A patient who has been under treatment for gonorrhœa, and has neglected himself, or been committing excesses, comes to you complaining of the following symptoms, which are usually mixed up with those of inflammation of the neck of the bladder.

He tells you that the feeling of scalding is increased when the bowels are evacuated, and the spasm of the sphincter is sometimes so great, as entirely to prevent the introduction of the finger, which at all times painful, is now often impossible. Pressure with the finger introduced into the rectum produces the most violent pain when exercised on the anterior wall of the gut, which latter is diminished in diameter. These symptoms, if unattended to, increase, and the patient, after more or less unsuccessful effort, is unable to pass even a drop of water.

PATHOLOGY.—Lallemand has given us the best description of the post-mortem appearances of this organ, from the large opportunities he has had of examining it when in a morbid state. In disease of the prostate attended with *acute inflammation*, he found the prostatic follicles gorged with thick pus, forming, by their assemblage, a firm and yellow body, similar to scrofulous tubercle; the surrounding cellular tissue was perfectly healthy, so that he could separate the lobes in their whole extent.

"In a more advanced stage, the prostate was *infiltrated with pus*, or a pultaceous matter, which, on pressure, issued out of the follicles in the form of little granules. In still more advanced cases, on slightly compressing the prostate, pus could be made to issue from all the excreting ducts; the organ contained likewise little abscesses of the size of a lentil or pea."

"The prostate may be three times its natural volume, and tear easily; its color pale, and easily broken down, and together with little abscesses may contain miliary tubercles in a crude state."

"The whole or part of the prostate may be in a state of suppuration, and may empty itself into the rectum or urethra by one or a number of small apertures, which may be follicles that have become ulcerated, and the envelope of the prostate may exist as a mere shell, the prostatic substance having been previously destroyed."—*Lallemand, vol. i., p. 71.*

The perusal, however, of many of his cases induces me to believe that scrofula had much to do as an exciting cause in this affection, and I suspect that in many of his cases, the acute inflammation and its results have been brought about by the elimination of tubercles, which have formed in the prostate, probably accelerated by the usual causes which develop scrofula elsewhere.

TREATMENT.—If a surgeon is called to the patient in the acute stage of the complaint, the use of leeches in *large numbers* applied to the perineum, or cupping-glasses, warm baths, and opiate enemata, with gentle purgatives, will generally cause a diminution of the suffering, and enable the patient to make water; but frequently these means will only partially succeed; in other instances they utterly fail, and on considering the circumstances, this result is not so astonishing. A highly-colored irritating urine has been collecting in the bladder, this presses on the prostate gland, whose sensibility has been greatly increased by inflammation. The canal passing through its substance is swollen and puffy, and the spasm of the surrounding structures completely impedes the flow of urine. In these aggravated cases, reliance must not long be made upon the means above alluded to; the deep situation of the inflamed structures prevents our remedies acting as they do in other parts of the body, and the importance of drawing off the urine becomes of such moment, that I do not now hesitate in recommending the early use of instruments, following them up by an antiphlogistic and soothing plan. Here again, however, the surgeon meets with difficulties he is unprepared for in the early part of his practice; for he has spasm, a diminished canal, and an enlarged prostate, in addition to the pain felt by the passage of the instrument along the urethra; and it requires very careful and delicate manipulation of any instrument to cause it to enter the bladder without producing mischief. Sir B. Brodie recommends the elastic catheter without the stilette; this, in my private practice, has not succeeded, and I attribute the failure to an impossibility of tilting the point over the inflamed prostate. I have found no such difficulty with the silver catheter of a moderate size, taking care to draw the penis well forward, at the moment that the point of the instrument is progressing, and then depressing the handle to an extent that a novice is unprepared for. As soon as the water is drawn off, the patient's symptoms abate; the urine will be found high-colored, often tinged with blood, acid, and loaded with mucous or pus globules. On withdrawing the instrument—and there is no occasion to leave it in the bladder—a few drops of blood may follow, and a soreness along the course of the canal remains. In a short time the desire of relieving the bladder will occur, the scalding accompanying the flow of urine; still the stream will not be so small as may be imagined, particularly if energetic treatment has been in the meantime employed. Generally, however, recourse must be had to the silver catheter. Although a little water may pass, we may often suspect that the bladder is unrelieved; particularly when there is some pain above the pubes, and percussion on that region fur-

nishes a dull sound, with desire to micturate frequently, and relief obtained only for a short time; the occasional passage of the instrument will not only relieve these symptoms, but prevent any future disease of the bladder.

Under this treatment, with rest in the horizontal position, low diet, and opiate enemata, the patient will complain of less and less pain, but the young surgeon will find to his annoyance, that this affection disappears very slowly, and if not properly cured, may lay the seeds of chronic enlargement of the prostate gland, which we shall presently describe.

To add to the embarrassment of the case, inflammation of the testicle may ensue, produced partly by the inflammation extending along the canal, and partly by the passage of instruments. Of course the most urgent symptoms must be treated, but such a complication has never deterred me from the use of the catheter, if it was thought advisable to relieve the bladder.

CHRONIC AFFECTION OF THE PROSTATE.

SYMPTOMS.—This complaint is the result of inattention on the part of the patient who has been suffering from the acute form; in some cases, more particularly in elderly persons, it comes on very insidiously, in other instances, patients who are laboring under some affection of the genito-urinary system, complain of occasional or constant pain of a dull aching character in the perineum, which shoots forward toward the glans, and causes the patient to draw forward and squeeze the penis; this pain occasionally extends down the thighs and toward the loins, and sometimes uneasiness is complained of in the testicle. These symptoms increase when the patient gets his feet wet, or drinks over night any acid wine, or when he has committed any venereal excesses; in a few days they go off, and return in a more severe form, and at shorter intervals.

On some of these occasions the urine is not voided so easily as usual, and the call to make water is more frequent; the stream may be forked or stopped suddenly; pain is often felt in expelling the last drops of urine, especially for the first few minutes after its passage. The pain is increased by connection, and not unfrequently a few drops of blood may follow micturition. The bowels are often constipated. Should the surgeon introduce a catheter, an obstruction may be met with, or the pain the patient feels in the perineum may become aggravated and last some time.

Surgeons often talk of enlargement of the prostate gland, and yet seldom satisfy themselves of its dimensions by means of the finger; and when they do so, not having a very distinct idea of what should be its normal volume, the greatest mistakes occur. To avoid such errors let me recall a few anatomical relations to my reader's attention.

When the finger is introduced into the rectum of a person not subject to disease of the prostate, the calibre of the gut is often found large in consequence of habitual constipation; if it be passed further up the gut, the gland will be felt anteriorly, forming a resisting firm substance; if the finger be now turned laterally, an additional quantity of the gland will be felt, and the surgeon will thus form an idea of what the natural condition of the prostate ought to be. Let him now observe the difference in an old man who is laboring under chronic affection of the organ. The gland will be found two or three times its natural volume, and it will encroach so greatly on the rectum, that the finger may be passed almost round the gut. While acquiring this very necessary knowledge, a catheter may be passed, and if the finger be in the rectum at the time the instrument passes, it will be felt traversing the membranous portion very distinctly, then the natural thickness of the prostate, then, emerging from it, the walls will be felt very thin again; now if a catheter is passed in the same way

in an old man, with the finger in the rectum, the tyro in surgery will have acquired much valuable information which will always be of value.

In chronic affection of the prostate gland various discharges will be mixed with the urine, or may ooze out of the urethra. As the patient seldom empties the bladder completely, a certain quantity of urine will remain in the fundus, and this becomes high-colored and ammoniacal, adding considerably to the irritation. The finger introduced *per anum* detects the prostate enlarged laterally, but particularly on the left side; and if a catheter be introduced in the bladder, the prostate will present an unusual thickness.

The symptoms I have above described rarely occur in the child or adult; it is usually in individuals advanced in years that we meet with them. Many patients are remarkable for their ruddy complexions and corpulency, but the affection is likewise seen in the pale or bilious-looking individual who leads a sedentary life; and there is nothing, perhaps, which destroys the *morale* of men more than these complaints; the sufferer is the wreck of the former individual.

COURSE OF THE AFFECTION.—Notwithstanding the severity of the symptoms we have described, the disease does not make very great progress, and persons live to a good old age notwithstanding. Some surgeons pretend that few men attain an advanced period of life without enlargement of the prostate; and Sir A. Cooper considers it a salutary process when the affection produces a partial retention of urine, thus preventing incontinence, which would, in old people, almost constantly take place, were it not for this preventive.*

This disease has, however, a tendency to increase, notwithstanding all our palliative measures; and complications and affections come on one after the other, until the patient sinks, either from exhaustion, or inflammation of the bladder, urinary fever, &c.

PATHOLOGY.—I have already alluded to the condition of the prostate, as far as we can detect it, during life, by means of the finger or catheter. Lallemand, in addition to the morbid appearances, which I have described at pp. 128-'9, says that he has "found the prostate containing, instead of pus, a thick opaque stringy matter, resembling in consistence nasal mucus. The gelatinous mass may extend its filaments into the lacunæ, from which it may be drawn out like bird-lime. In size the gland may be voluminous, unequally knotted, and firm in consistence."—(Vol. i., page 22, 49.)

Post-mortem examinations show that abscesses may occur in the substance of the organ, and open their way into the urethra; and then the urine, introducing itself, will increase the mischief, forming fistulous openings, and all the consequences alluded to under that section. In chronic cases, the middle or third lobe will be found considerably enlarged, and is detected as the cause of the obstruction to the flow of urine, or the passage of the catheter, forming a valve behind the orifice. In consequence, the course of the urethra is altered, and its calibre diminished; and if the lateral lobes are hypertrophied, the canal opposite the pubes is nearly obliterated. I have before stated, in speaking of strictures, that when any impediment occurs to the stream of urine, the canal behind it will become dilated; this circumstance happens in prostatic affections; not only is it dilated, but elongated; hence the necessity of employing a longer catheter than usual.

Sir E. Home, in his valuable work on the Prostate (a book I can not too highly recommend to the notice of my readers, and one to which I am indebted for many practical remarks), says, that the surface of these enlarged portions of the prostate may become excoriated, and put on the appearance of ulceration. The mucous membrane which covers the middle lobe may be continued on each side in the form of a transverse fold.† Cysts may form in or about the gland,

* Sir A. Cooper's Lectures, page 521.

† Sir E. Home, vol. i., page 162.

and acquire the size of oranges, their inner surface being lined with coagulated lymph.

The prostate will present great varieties in structure; in some cases we meet with it completely sootened; in others it will have a scirrhoue hardness.

The Prognosis is usually unfavorable, but of course much must depend upon the condition of our patient, the period at which we see him, and the complications which arise; every case will present varieties, but too often our treatment can only be palliative. Sir E. Home, at page 69 of his work, says: "If attended to in proper time, the enlargement may in many instances be reduced, in others prevented from increasing, and, even in less favorable cases, rendered so much slower in its progress, that the patient's life is prolonged, and his sufferings mitigated in a very great degree."

THE DIAGNOSIS.—Sir A. Cooper says: "The enlargement laterally may be readily ascertained by introducing the finger into the rectum, but the enlargement of the middle lobe can not be so learned. In what way then? Why, by the introduction of a catheter or bougie, and the latter is the best; it will be found to stop suddenly. You are then to introduce a catheter for the purpose of drawing off the water; the instrument will be resisted in its common course, and you must depress the handle a good deal, with a view of tilting its point over the enlarged gland: thus the end of the instrument will be rising perpendicularly, as it were, behind the pubes."^{*}

TREATMENT.—I have had occasion in the last page to notice the valuable observations made by Sir E. Home on the subject of the prostate gland. I shall, in speaking of treatment, cite him constantly; and although his work was published in 1811, modern surgeons have varied little the plans of treatment that eminent practitioner recommended.

In the first stage of the disease, when no absolute obstruction exists to the flow of urine, great advantage may be experienced by cupping from the loins, or the application of leeches to the perinæum. These measures may be aided by a clyster containing opium, and the internal use of Dover's powder. The hip-bath may be prescribed, of a temperature agreeable to the feelings of the patient. I need not here state that all causes which have given rise to, or can be supposed to aggravate the complaint, must be avoided. At this stage of the affection, the employment of bougies and catheters can not be too much reprobated. When irritation has been alleviated, the best effects may be expected from the use of hydriodate of potash, taken in doses of from three to ten grains three times a day. Frictions, with iodine or hydriodate of potash, on the perinæum, have appeared to me to be followed by a diminution in the size of the gland.

When the surgeon is called at a later period, the patient making violent and unsuccessful efforts to pass water, and the bladder is felt distended above the pubes, a warm bath, opium, and local bleeding, will often effect a palliation of the suffering, and enable the patient to relieve the bladder. When, however, this does not occur, the practitioner is called upon to act without delay, and the water must be drawn off, the same precautions being taken as were mentioned when speaking of retention of urine from other causes. I shall not, therefore, allude to them, further than to remind my readers that they depend upon the affection of the prostate.

Sir E. Home, who enjoyed such immense opportunities of treating these diseases, recommends that the instrument should be very soft and smooth,[†] to prevent its disturbing the urethra; rounded at the point, and as large as the canal will easily admit, that it may the more readily disengage itself at the turn

* Sir A. Cooper's Lectures, page 524.

† Rynd recommends a silver catheter as being more manageable; and in this I agree with him, for the surgeon has not the same control over the point of any other instrument.

into the bladder. The apertures in its sides should be wide, to prevent their being clogged with mucus or blood ; and the catheter should be pliant, that it may adapt itself to the form of the parts, and give little disturbance while retained in the bladder. Besides these properties, it is desirable that it should have a permanent curve at the point, even to a greater degree than is usually given to the common silver catheter ; and instrument-makers now manufacture them with a *permanent* and desirable curve, and they are far better than those which gain it by being kept on stilettos, and which, when warm, have a tendency to assume a straight direction.

The catheter should be introduced (continues Sir E. Home) either toward the right or left side, with the handle nearly in a horizontal line ; and when it reaches the membranous part of the urethra, the handle should be gently and gradually brought toward the perpendicular line, the point all the time being kept in motion ; and when it is nearly upright, the handle should be depressed. When the flexible catheter has no stilette, a good deal of dexterity is often required. The great advantage of passing the instrument in a lateral direction is, that the point may by that means be guided into the space between the lateral and middle lobes of the prostate, where there is a groove along which it may be directed, between these two projecting parts, into the cavity of the bladder. When the point is entangled in the folds of the mucous membrane, instead of repeating the endeavors to pass the instrument in the same direction, there will be an advantage in partly withdrawing the instrument, and trying to introduce it on the opposite side, where the same thing may not occur. If the catheter, with the stilette, can not in this way be made to pass, it must be tried without a stilette ; and if it is still prevented from going farther than before, a finger introduced into the rectum, and pressing upon the curved part of the catheter, may give it a right direction, so as to guide it into the bladder.

Sir E. Home recommends the catheter to be left in the bladder, if any difficulty has been experienced in its introduction. In respect to the position of the patient, his own comfort must be principally considered ; the standing position is, however, the best. The catheter may be then plugged, and kept in position by a common T bandage, the longitudinal band of which is divided up the middle into two portions, one of which lies in each angle between the scrotum and thigh, and furnishes a fixed point to which the catheter may be secured by ligature. The time that the catheter is to remain in the bladder must depend upon circumstances ; it may be left three or four days, and then reintroduced and permanently kept there, or the water may be drawn off when required. The second introduction is less painful and difficult.

With all possible precautions, however, sometimes catheters will not pass, and yet the retention must be relieved or our patient dies. What is to be done ? I should in such case prefer pushing a piercing instrument* through the enlarged prostate, for the reasons spoken of under the head of relief of retention

* Liston says : "When enlargement of the prostate, whether of the whole gland or principally of the third lobe, presents an insuperable obstacle to the passage of the catheter, and when a surgeon has taken care to assure himself that such is the case, I conceive that he ought to perforate the gland in the direction of the natural course of the urethra, not with the catheter, but with an instrument better adapted for the purpose—a long canula or catheter, with open end and very slightly curved toward the extremity, provided with two wires, one blunt and bulbous at the extremity, the other pointed as a trocar, both made so as to project a short way beyond the end of the canula. The canula is passed on to the resisting body, its orifice occupied by the bulbous wire, which is then withdrawn, and its place supplied by the trocar, the instrument being held steady in the proper direction. The trocar or stilette is pushed forward along the canal with the canula; the former is then withdrawn, and the latter retained. This proceeding I consider quite safe in the hands of an experienced surgeon, one well acquainted with the urinary passages, but not otherwise. It is in every way preferable to puncture of the bladder above the pubes, to puncture behind the prostate, or to puncture of the prostate along with wound of the rectum."—*Elements of Surgery*, p. 140.

Rynd says : "The arguments raised against it [perforation of the prostate] are more formidable in theory than in practice. All that need be insisted on is, that the pushing of a catheter through the substance of an enlarged prostate is not necessarily followed by fatal consequences."—Rynd, p. 179.

from impermeable stricture. The objections against paracentesis vesicæ, either by the rectum or above the pubes, have been fully detailed in the chapter upon infiltration of urine. It appears to me that less danger attends puncturing the prostate than any other treatment.

SECTION IX.

DISEASE OF COWPER'S GLANDS.

DURING the course of gonorrhœa, it not very unfrequently happens that an affection of Cowper's glands occurs; it may come on imperceptibly, and the patient may take no notice of it until there is considerable swelling of the parts. This occurred in a case which I lately witnessed. In other instances there is fever, and all the symptoms of abscess; pain is felt in the course of the urethra, followed by fluctuation at one point, and difficulty in making water. M. Ricord considers that the affection commences in Cowper's glands in consequence of the extension of inflammation; that pus is formed, and has a tendency to make its way outward.

An abscess, however, may occur in the course of the urethra, in consequence of an abrasion of the mucous membrane, and a limited infiltration of urine follow. The abrasion may heal, and a small abscess will result, situated close to the urethra; if it occurs in or about the bulb, such a case will be impossible to distinguish from inflammation of Cowper's glands. To the finger this abscess will give the sensation as if it were attached to the urethra by a pedicle.

The TREATMENT must consist in attempting to prevent the formation of matter by antiphlogistic means; or, if an abscess be present, unaccompanied with inflammation, we may reasonably expect to cause its absorption by rubbing the part with blue ointment. Should the skin become livid, not a moment should be lost: it should be opened, and the matter allowed to escape; the part will then heal like any other abscess, or an induration may remain, which it will be necessary to treat by blisters, &c.

SECTION X.

EPIDIDYMITIS.

SYNONYMOUS TERMS.—In the older writers we find the term *hernia humoralis* frequently made use of. Astruc, in 1740, wrote “*De Tumore Testium Venereo, sive Hernia Venerea.*” Hunter, in 1784, employed the term “*swelled testicle.*” B. Bell, in 1793, treats of the affection under the chapter “*Of Swelling in the Testicle.*” Swediaur, in 1809, speaks of “*tumeur des testicules.*” Sir Astley Cooper, in 1830, described the affection, terming it “*acute inflammation of the testis, or testitis.*” M. Lagneau, in 1831, heads his chapter “*Testicule Venerien.*” Mr. Wallace, in 1833, writes on the “*disease of the testicles*” (complication of catarrhal syphilis). Sir B. Brodie, in 1833, calls it “*acute inflammation of the testicle,*” but tolerates the term *hernia humoralis*. In 1836, M. Desruelles described the affection under the term “*orchite aigue.*” In 1836, M. Rochoux first called the disease “*vaginalite.*” M. Velpeau, in 1839, calls it “*orchite.*” M. Ricord, in 1839, has denominated it “*épididymite blennorrhagique.*”

SYMPTOMS AND COURSE OF SIMPLE UNCOMPLICATED CASES.—During the existence of gonorrhœa, it not unfrequently happens that a patient, who is observant of his complaint, feels a pain in the perinæum, accompanied or preceded by a dull aching sensation in the groin, and along the course of the spermatic chord, ultimately becoming fixed in the back part of the scrotum, and he can often cover the painful part with his finger. He remarks that the gonorrhœal discharge is somewhat diminished. When subject to nocturnal emissions, such a patient will feel great pain for some hours afterward; but at this stage his linen presents no marks of blood—the seminal discharge appears natural. When the surgeon sees the patient at this early stage, no swelling or affection of the organ may be present—and twenty-four hours will elapse before they are evident in other instances; the finger detects a distinct swelling confined to the epididymis, which is sometimes hard and painful on pressure. There is little or no redness of the scrotum, and the spermatic chord is often free from any thickening, although usually the vas deferens can be felt more distinctly than in the healthy state, and a feeling of pain is expressed when pressure is made in its course. In such a case, if proper treatment and rest be enjoined, the disease proceeds no further, and the patient rapidly recovers. If, from inattention to such slight inconvenience, the patient uses exercise, or goes about his ordinary occupations, the consequences soon become apparent; the swelling in the scrotum increases, great pain is experienced on making the slightest movement, and the patient supports the testicle with his hand, so great is his fear of motion, which aggravates the pain in the course of the chord. At this stage he is often awaked by great augmentation of pain from nocturnal emissions, and he is surprised at seeing his linen stained with semen mixed with blood. There is, however, occasionally some alleviation of the suffering after an emission.

M. Ricord states that he has seen pus intimately mixed with the seminal fluid. I have witnessed considerable augmentation of suffering to the dull, aching pain in the perinæum when the patient goes to stool. A careful examination of the scrotum at this stage of the affection will show that there is not only redness of the skin, with great augmentation of heat, but that effusion has taken place into the tunica vaginalis. If the surgeon, with the left hand, embrace firmly the affected half of the scrotum, so as to render tense the testicle covered by its envelopes, and with the fore-finger of the right hand gently but suddenly press on the centre, a distinct feeling of fluid will be experienced, and the elastic body of the testicle will be felt below it. Should a lancet be thrust into the point where fluctuation exists, a clear or slightly turbid serum, varying in quantity, will often escape, and the size of the tumor will sensibly diminish. When the fluid thus contained in the tunica vaginalis has escaped, the greater portion of the remaining swelling is found to depend on the epididymis, which is hard and painful, and can be felt distinct from the testicle. This appears to constitute the disease, at least in the majority of the cases. Effusion may not be confined to the tunica vaginalis; we often see the sub-cutaneous cellular tissue infiltrated with serum, and become œdematosus or phlegmonous: inflammation may result, and distinct abscesses form. However, when intense suffering has preceded, shooting upward to the loins; when much fever is present, accompanied with hiccough; a tendency to syncope, nausea, vomiting, together with excessive sensibility of the apex of the swelling, we may affirm that the testis itself is the principal seat of the affection; and if the fluid in the tunica vaginalis has been allowed to escape, the testicle may be found hard, having lost its proper elastic feel, and seems to form a nodulated body which we are unable to distinguish from the epididymis.

The general or constitutional symptoms at the commencement are slight, but in the stages of the complaint last described they may be very severe, and have

been occasionally confounded with hernia.* A furred tongue, hard pulse, pain in the abdomen, vomiting, constipation, &c., are all met with in the severe forms of the disease.

PATHOLOGICAL ANATOMY.—Patients laboring under this affection rarely die, as will be presently seen; but it occasionally happens that surgeons have an opportunity of observing the morbid changes which the testicle and its envelopes undergo, when a patient has been carried off by some affection of a more fatal kind. I cite below two instances of this disease where patients laboring under the complaint died, one in consequence of typhus fever, the other from an acute inflammation of the brain; and I may add that all the cases observed since, by various persons, have confirmed the view here taken of the pathology. In a simple case which M. Ricord presented to the Academy of Medicine in Paris, the epididymis was affected alone. In another case, where severer symptoms had been observed, the tunica vaginalis presented traces of pus and false membrane. In the most severe forms, plastic lymph was effused among the seminal tubes. Mons. Gaussaile, late interne of M. Cullerier, at the Hôpital du Midi, has given the two following cases, which are to be found in the twenty-seventh volume of the "Archives de Médecin" for October, 1831, page 189:—

CASE I.—The epididymis was double the usual size, and hard. The testis of the same side presented twice its ordinary volume. This, however, was found to depend in great part upon an accumulation of a thick, turbid serum, somewhat bloody, which flowed out when the tunica vaginalis was opened—the size of the testis immediately subsided. The tunica albuginea seemed thicker than usual; its surface presented a large number of minute vessels spreading themselves out in various directions on its surface. The substance of the testis presented no appreciable change: its consistence was somewhat firmer than usual, and the color deeper.

CASE II.—The vesicule seminales larger than usual, and firmer to the finger; on the left side they were much injected, and of a dark-red color, containing a large quantity of a yellowish-white substance, which was somewhat granular. Both the vasa deferentia presented similar traces of inflammation, and were filled with this same matter.

The epididymis of either side was voluminous; the surface resembled the color of lees of wine, but this discoloration did not extend to the testis. The testicles presented their ordinary volume; some vessels were observed ramifying on their surface. A small quantity of reddish serum was found in the tunica vaginalis.

CAUSES OF THE AFFECTION.—These may be of two kinds—the predisposing, or direct and exciting causes.

Predisposing Causes.—Under this head may be included fatigue, violent exercise, repeated sexual intercourse, and any circumstance producing excitement of the organs: authors have mentioned particularly excitement of the animal passions. A striking case of this kind lately came under my notice. A gentleman, who was about to be married, and who had been continent for three years, consulted me on account of an enormous swelling of the left testis, which had existed about a week. He stated that his feelings had been very violently excited for some time past, and subsequent to each interview he had with the lady he was engaged to be married to, he experienced severe pain in the chord and testis, involuntary seminal emissions not unfrequently occurring during the night. This, and the fatigue he then underwent, were the only reasons I could assign for the affection, which was recurring from time to time, and was only permanently cured when he married. He is now perfectly well, and has remained so ever since.

* See Pott's works, and case, page 200, occurring when the testicle was confined in the inguinal ring.

Injections have been said to predispose to epididymitis ; this, however, I greatly doubt, unless when injudiciously administered. I should be disposed to assert that they very frequently are found the best means of warding off the attack. The impunity with which injections of nitrate of silver may be employed, even under apparently the most unfavorable circumstances, has been most strongly illustrated within the last few months. Mr. Langstaff brought a gentleman to my house who had ineffectually taken all sorts of remedies for gonorrhœa during four months, and had consulted the leading surgeons in the metropolis. The patient was a delicate person, and complained of pain in the epididymis ; he had suffered from inflammation of the bowels, supposed to be produced by cubeb, and tenderness still existed in the right iliac fossa ; there was also urethral discharge. Injections of zinc had been formerly used ineffectually ; and latterly it was thought dangerous to employ them. At this period of the disease I was consulted, and notwithstanding the unfavorable aspect of the case, I employed nitrate-of-silver injections, and in ten days our patient was sent to Brighton quite free from the complaint, the epididymis never having become swollen nor painful after the injection. This, like the case related at page 37, will doubtless be considered to have been rashly treated ; but in the numerous instances which I have met with I have never had cause to regret the plan ; and the futility of the antiphlogistic treatment long continued by the first London surgeons shows that the case was proceeding from bad to worse, ultimately yielding readily to injections, which, however, must be used with the precautions spoken of at page 64.

Daily observation shows that various trades predispose to the affection : we meet with it much more frequently among weavers, turners, grooms, and those whose testes are liable to friction. Among other predisposing causes I should mention an habitually flaccid condition of the scrotum ; for any one may readily convince himself that a strong cremaster and firm scrotum rarely are met with in individuals suffering under this affection. This is corroborated by the fact that the left testis is more frequently affected by the disease than the right, which is sustained by the seam of the trouser affording it an adventitious support. Wet, damp weather seems to act in the same manner in predisposing to the affection, and may afford an explanation of the epidemic nature of the complaint at some seasons of the year.

The *direct and exciting Cause* consists in inflammation of the urethra. Observation proves that this may take place by direct continuation of the inflammation along the vesiculae seminales and vas deferens to the epididymis ; or these parts may escape, by virtue of a law common to many mucous surfaces, in virtue of which extremities of canals may become sympathetically affected, the intervening surface not perceptibly participating in the inflammation. There can be no doubt of the fact that the epididymis is often affected, while the chord remains perfectly free from disease.

The cause, viz., inflammation of the canal of the urethra, however, seems to act in a manner that, *à priori*, we should not expect, for the epididymis is rarely affected during the first week, or during the period when the inflammation is most acute ; from the third, fourth, and fifth week, this affection is most frequently met with. I take the following account from some statistical tables made by Mr. Gaussaile : During the first week, three cases ; second week, four cases ; third week, five cases ; fourth week, sixteen cases ; fifth and sixth weeks, thirty-nine cases ; two months, two cases ; three months, one case. Now, as in the first fortnight, the inflammation, although very severe, has not reached the deeper portions of the canal, being confined usually to the corpus spongiosum, it is probable that this is the reason why, at the early periods of the affection, the epididymis escapes. Such a supposition, however, is of some practical utility ; for if true, it leads to the practice of attempting to prevent the occur-

rence of the affection of the testicles, by putting a stop, by all active means in our power, to the inflammation before it has reached the prostatic portion of the canal. It may, moreover, induce the surgeon to inform the patient who consults him about the fifth week, that an affection of the testes is imminent.

COMPLICATIONS OF THE AFFECTION.—The extension of the disease from the epididymis has been above spoken of, and I here collect the complications in the order of their relative frequency; the epididymis may be primarily or alone affected; then the chord becomes inflamed; next, the tunica vaginalis, giving rise to all the symptoms of acute hydrocele, which has been of late, in France, supposed to play so large a part in the affection I am now treating of. The next most frequent complication is œdema of the scrotum and chord. Lastly, the testicle may become implicated, causing the disease properly called orchitis or testitis.

TERMINATIONS OF THE AFFECTION.—When the epididymis alone has been affected, provided that the case is seen early and proper means are employed, that organ will speedily recover its normal structure and functions; it often happens, however, that a hard, nodulated mass remains, which resists all the usual methods of treatment, but which, in time, will become diminished in size, and the perfect function of the organ be recovered; however, for months after, great pain will be felt during sexual intercourse, and relapses may recur as a consequence. The effusion into the tunica vaginalis may, in some few cases, distend it to such an extent that it will form a hydrocele requiring an operation; in other cases, effusion of pus or coagulated lymph may take place, and induce all the consequences which follow such lesions; these terminations are, however, rare. The cellular tissue of the scrotum may regain its former condition, or the inflammation may become phlegmonous and give rise to abscesses, or induce a chronic thickening of the whole scrotum, which alters its appearance considerably. Lastly, the testicle may present the hard, irregular mass above spoken of, and suppuration occur; when the slough separates, the seminiferous vessels become unravelled, and appear as so many shreds at the opening; and not unfrequently a fungous growth sprouts out, a condition of the testicle which has been so ably described by Mr. Lawrence. Lastly, the disease may cause the development of any latent disposition to tubercular disease in the epididymis or testis; and I have met with numerous malignant affections which the patients themselves attributed to an affection of the scrotum following gonorrhœa; here, however, there must have been some previous predisposition in the constitution, which becomes fostered by the excitement produced by the disease in the epididymis.

It may be here remarked, that in good constitutions there is little tendency in the epididymis to suppurate, whereas abscesses may form in the testis itself, when the disease is improperly treated; but although the epididymis has little tendency to suppurate, it very commonly becomes hypertrophied, whereas after inflammation, the testis has a tendency to become atrophied.

DIAGNOSIS.—It would require more space than I can devote to this section, to point out the means of diagnosis between this affection and all those diseases with which it may be confounded; it is also unnecessary, as they will be hereafter fully discussed under the head of syphilitic affections of the testis. The cases of difficulty in acute affections which I have met with, have been under circumstances such as the following: a similar instance will be found in Pott's work on hydrocele.

A young man, twenty-four years of age, was in the habit of amusing himself, while a boy, by pushing his testicles into the abdomen; one day the left testis did not descend as usual. Two months previous to his admission, he contracted a gonorrhœa, which discharged profusely; notwithstanding, he continued his employment, that of a wheelwright, a business which requires great

bodily exertion ; in about a fortnight after, he felt a painful sensation in the left groin, or a colic, as he expressed himself, in the loins ; and this becoming worse, he entered the *Hôpital du Midi*, a month after the commencement of his complaint, suffering under great pain in the inguinal region of the left side, which was much inflamed, and pressure on this part produced that peculiar feeling, but in a greater degree, which is excited when the testicle itself is compressed. On examining this patient, no testis was found on the left side of the scrotum ; but on passing the finger into the left inguinal canal, a rounded body was distinctly felt, resembling the testis in shape, and the patient stated that he experienced a similar kind of pain to that felt when the testicle on the opposite side was squeezed. Notwithstanding the vomiting which existed—the constipation of some days' standing, pain referable to the abdomen, and a quick, hard pulse—the case was immediately considered to be the affection I am describing, varying only in the situation of the testicle within the canal. The treatment was such as I shall presently detail, and the patient did well, and left the hospital in a few weeks. I shall make no comments on this case ; it speaks for itself ; and I believe there are few surgeons who would be able to distinguish these symptoms from those of hernia, although I do not know that the diagnosis, or rather the occasional complication, is mentioned, except in Mr. Pott's work on hydrocele, who states that this error was committed by a practitioner who sent for him to operate on a case of supposed hernia, which turned out to be one of *hernia humoralis* ; should, however, a strangulated hernia occur in combination with this affection, there might be some doubt, and the operation, if attempted, would be rendered difficult.

The diagnosis of affections of the different parts contained in the scrotum, which become successively diseased, next requires our attention, particularly as the complications above alluded to have scarcely been noticed by English writers. On the subject of tumefaction of the epididymis, I shall not dwell, as from the time of Swediaur, in 1809, authors, with hardly an exception, have admitted that that organ participates the first in the affection. Thus Sir A. Cooper says, in his valuable treatise on the testis, that a swelling of the epididymis is a third effect of inflammation. He further says : " This portion of the epididymis (*globus major*) is more frequently diseased than any other part of the testis or epididymis."

Sir B. Brodie, in his lectures,* states : " It [swelling] generally begins in the epididymis, and then extends to the rest of the organ."

On the diagnosis of effusion into the tunica vaginalis, I must beg to dwell at some length, for, although it is admitted by Sir A. Cooper to exist frequently, still I do not think sufficient attention has been paid to the subject by the profession, and in fact (as I have had many opportunities of observing when dressing under Professor Velpeau), practitioners are seldom agreed upon its existence. Fluid, when effused in small quantity into the tunica vaginalis, can not be easily detected, and may be mistaken for a swollen state of the testicle itself, a thing of everyday occurrence ; and this is a circumstance, I believe, which has induced English surgeons to speak of the affection as an acute inflammation of the testicle. My readers will therefore see, that the diagnosis of effusion into the sac, from inflammation of the testis itself, is not a mere quarrel about terms, or one of those fine-drawn diagnostic distinctions, but is a matter of great importance. When fluid is present in the tunica vaginalis, the surgeon may satisfy himself of its existence in any of the following ways. I copy M. Velpeau's plan of detecting it from the French Dictionary of Medical Sciences.

" If a considerable collection of fluid exist, there will be a transparent state of the tunica vaginalis as late as the eighth day ; should it be turbid, or the

* *Medical Gazette*, vol. xiii., 1833-'34, p. 219.

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tunic thickened, the next best means is to seize the testis at its root between the two fingers; the thumbs should then be pressed on the two extremities of its anterior part, and the following sensations will be experienced; the sudden pressure will produce the sensation of a layer of fluid which sinks into a cavity, but is soon checked by a more firm and regular surface; the other finger will feel, at the same moment, an undulation, which raises it." When the serosity is abundant, it will often be detected by its transparency. But, perhaps, the simplest way is to puncture it with a lancet, an operation attended with no danger; the escape of the fluid, though productive of no very good effect (except in cases where the tunic is very much distended), has never been, in a great number of cases that I have seen so treated by M. Ricord and M. Velpeau, attended with any accident.

Swelling of the testicle may, as Sir B. Brodie states, be usually supposed to exist from the severe pain felt by the patient, when the glandular structure of the testicle becomes inflamed within the cavity of the fibrous, unyielding *tunica albuginea*; such a rational diagnosis, however, has not been considered sufficient by the surgeons above quoted. Having punctured the tunic, and allowed the serosity to escape, they then feel for the testicle, which, if inflamed, has, from reasons stated above, lost its peculiar elastic feel, and may be felt hard and inelastic, either partially or entirely.

On the diagnosis of effusion into the cellular tissue of the scrotum, I must beg to say a few words. Edema may follow as a consequence of various affections. I have lately seen a case of eczema of the scrotum, with great edematous swelling of its sub-cutaneous cellular tissue, rendering the scrotum so hard, that it required some time before I could decide whether the testis was free from disease; rest, cleanliness, and proper treatment, however, enabled me to clear up this point. I mention the case, as its nature was mistaken.

One word more, and I have done with the subject of diagnosis; the edematous swelling of the scrotum, when attended with phlegmon, may bring on abscess; it becomes very important to open such abscesses early, and their diagnosis deserves some consideration.

The characters of such an abscess are the following: The skin becomes adherent to some part of the epididymis or testes; an indurated circle is formed around it; in its centre distinct fluctuation may be felt, and this point is covered by the distended skin, which is of a darker color than that of the surrounding parts. In fine, the bistoury should never be used unless these signs are present, otherwise we may run the risk of wounding the testicle, mistaking its elastic feel for matter supposed to be contained in an abscess.

PROGNOSIS.—That this is favorable the preceding pages will I think attest, consequently there is no occasion for my alluding further to the subject; it will however be necessary to say a few words on the probability of the occurrence of the complications, or of the speedy termination of the complaint. Seen at an early period, previous to the occurrence of swelling of the chord, the surgeon may usually assure his patient that the disease will be speedily relieved. But if the patient neglects himself, there is great liability to relapse. I may here state that a virulent or mild gonorrhœa seems to influence little the prognosis; this, as previously shown, will depend upon other circumstances. The chance of suppuration of the testicle taking place is very slight, unless the treatment be very injudicious. The effusion into the *tunica vaginalis* will, as Sir Astley Cooper has so justly observed, be speedily absorbed, and seldom degenerates into chronic hydrocele, or requires more palliative treatment. M. Ricord, in a late lecture, reminds us that blennorrhagic epididymitis seldom suppurates, orchitis frequently does. The former produces hypertrophy of the epididymis, the latter atrophy of the testis.

The patient is often anxious to learn if the testicle will recover its proper

functions, and the assurance that this will occur, and that atrophy of that organ is not probable, will give him a degree of confidence not experienced except in cases of this affection where pathology shows that the most important part, the testis, usually escapes altogether; however, the surgeon should inform him that induration of the epididymis may remain for some months.

When nocturnal pollutions of semen mixed with blood occur, the same consolatory prognosis can not be held out; and when there is a scrofulous tendency in the patient's constitution, the surgeon should take care how he holds forth sanguine expectations of a permanent or speedy recovery, otherwise his treatment may be blamed, and his prognosis found to be incorrect: let him in such a case share the responsibility with another.

THE TREATMENT.—As every surgeon should have in view the prevention of the disease, the indications for effecting this must necessarily follow from a consideration of the causes which have been shown above to produce it. I may mention that a speedy cure of gonorrhœa, previous to the third or fourth week, and the employment of a suspensory bandage, are the most effectual means of preventing this complaint, and they should never be omitted.

When epididymitis is coming on, or the attack is threatening, the patient should be sent at once to bed, and the scrotum enveloped in carded cotton, and thus supported on the thighs; the most perfect rest should be enjoined, together with a brisk purge of calomel and jalap, and low diet. By these simple means, attacks of inflammation may be altogether avoided, particularly if the patient keep on his bed or a sofa for twenty-four or thirty-six hours.

When the disease has become developed, either in consequence of neglect or inattention on the part of the patient, or from recourse not being had to surgical advice, the following means will be found the most effectual in preventing its further extension, and relieving the complications which have occurred. Rest in the horizontal position is among the first and most efficient remedies: merely keeping at home is insufficient,* repose on a bed or sofa becomes indispensable; and the other means I am about to mention will afford little benefit, if the patient can not lay up for a few days. In the acute form of the complaint, when there is great constitutional disturbance, abstraction of blood from the arm will often be called for, followed by the local application of leeches. On this subject I must beg to say a few words: leeches should, as a general rule, never be applied on surfaces which have a substratum of loose cellular tissue, such as the scrotum, eyelids, vulva, &c. I can recall to my recollection various instances of the very worst effects—such as erysipelas, œdema, ulcerations, and gangrene, following the application of them to these surfaces; it is true that in nine out of ten cases these consequences may not happen, but the careful surgeon should avoid even these exceptional ones, particularly when he is aware that all the good effects, without the ill consequences, will follow their application on the groins or perinæum, and let not the practitioner be thrifty of them; a few leeches often do more harm than good in acute inflammation, and the patient does not save either time or expense. As Sir Astley Cooper has so well remarked, patients are often, from their social position, unable to apply leeches, or they may be procured with difficulty; under such circumstances the surgeon may with a lancet puncture the scrotal veins, and withdraw the requisite quantity of blood,† the patient standing before him; cold and the recumbent posture will immediately check the bleeding. On

* In hospital and dispensary out-patients rest may be enjoined, but will not or can not be maintained. In these instances I should strongly recommend the practice of Mr. Gay, who has kindly shown me his cases at the Free hospital. He there finds that enveloping the testis in wet rags, and giving his patients twenty or twenty-five drops of tincture of hyoscyamus every four hours, having previously purged them, is generally sufficient in relieving rapidly the affection of the testis. In private practice, however, the treatment has failed so frequently, that I should not advise its employment, unless the patient was unable to leave off his ordinary occupation.

† In my own experience I have found difficulty in obtaining much blood.

the subject of local applications, the feelings of the patient may be consulted; cold washes, or warm poultices, may be prescribed, or the testis may be enveloped with rags wet with a solution of opium, and covered by oil-silk. I need not say that aperient medicine must be given in cases of constipation, and a strict antiphlogistic regimen recommended. The scrotum should be supported by little pillows made of bran or cotton; this position assists the venous system greatly. The employment of tartar-emetic in nauseating doses is undoubtedly of benefit in lowering the circulation, but alone it should not be relied on. In twenty-four hours the acute symptoms will usually have passed away, if the epididymis alone be affected; and it is then necessary to employ compression of the affected part, in the manner I shall presently describe.

In a recent lecture, reported in the "Gazette des Hôpitaux," p. 181, 1848, M. Ricord says: "In some instances, if in spite of our treatment the disease increases, we should treat it still more actively; if the symptoms become again aggravated, and suppuration occurs, free incisions should be at once made. One of my colleagues, M. Vidal, has very properly recommended that the old plan of Jean Louis Petit should be put in force. This consists in dividing the tunica albuginea so as to overcome the state of strangulation produced by the inflamed seminal tubes. If orchitis exists, this division of the tunica albuginea is an excellent plan, although the operation might alarm many surgeons: still it is a very simple affair, and puncture of the tunic often takes place in tapping hydroceles, without any ill consequences. We can readily imagine that the division, even in cases of a sound testis, where there is only epididymitis, may do much good, for a swollen epididymis may occasion strangulation of the testicle. The division should be made with a lancet, and extend one or two centimetres in length. Much alarm has been created relative to hernia and protrusion of the tubuli seminiferi, but experience does not bear out such a supposition."

English practitioners have probably never seen this treatment put into practice, and I may mention that I have never had occasion to employ it in private practice. To show, however, that it can be done with impunity, Mr. Marshall states, that the tunica albuginea, in a dog, was divided along the whole length of the testis, and the parenchyma of the testis cut into for some depth. The organ was replaced in the scrotum, and by means of sutures the wound was closed. Four months after the operation the testicle differed in no respect from the other. There existed the same volume, consistence, and sensibility in both testes; in fact there was a complete anatomical identity, and it seemed as if this identity extended even to the function.—*Gazette des Hôpitaux*, 1847, p. 631.

One of the greatest errors in the private practice of the present day consists, I think, in not treating acute affections of the testis sufficiently energetically, although the treatment may be continued during a long period. In consultation practice I meet with patients who have been confined to their beds, and repeated applications of leeches have been employed, the strength of the patient is reduced, and yet the disease goes on.

In such cases the chord is not generally affected, but the body of the testis and epididymis are the seat of a chronic inflammation, which might continue *ad infinitum*. I desire all antiphlogistic treatment to be left off, prescribe better diet, commence giving opium or hyoscyamus, followed by a light tonic, support the testis by strapping, and in a few days the surgeon may turn his attention to the cure of the gonorrhœa by the ordinary means, which it is not my intention here to enumerate; in doing this, the cause being removed, the effect will speedily disappear, and not be liable to return.

When the acute stage is complicated with considerable and rapid distension of the tunica vaginalis occasioning much pain, great relief will be instantly

given by puncturing that membrane. When the chord is much swollen, poultices and leeches must be persevered in for a time, and compression should never be recommended.

In cases of abscess, I need not state that they should be opened as early as possible.

METHOD OF EMPLOYING COMPRESSION.—Compression is made on the testis by means of strips of plaster. The *emplastrum vigo cum mercurio*, of the French codex, is the preparation M. Ricord employs, cut into strips about an inch wide; but common adhesive plaster answers equally well, provided it be spread upon mole-skin or some flexible medium, and not on glazed calico, which is very objectionable, on account of its not applying itself accurately to the short turns wanted.

The manner of employing the strips is as follows: embrace the affected testicle in your hand, drawing it, at the same time, away from the other testis; then pass a strip of plaster around the chord, just where it is in connection with the testicle, to prevent the testis escaping out of the scrotum; this being done, the scrotum of the affected side will be applied closely upon the testicle, which presents an oval shape; the strips of plaster marked 1, may then be applied in circular layers around the testicle, until all but the lower part is included. The latter may then be compressed by smaller and shorter strips, see figure 2, placed at right angles to the circular ones, which they thus maintain in their place. The testicle is now equally compressed, and the strips of plaster should be drawn tolerably tight; the patient will usually complain of some degree of pain during the few minutes the surgeon is applying the strapping, but this rapidly disappears, and the patient expresses himself immediately relieved from a dull aching pain, which had probably existed a long time. He falls into a quiet sleep, and awakes entirely free from suffering. In exceptional cases, when the compression has been employed in cases unfitted for it, or when it has been ill applied, pain increases in the testis immediately, compression should then at once be removed, and the antiphlogistic plan recommended.

The annexed woodcut will better explain the manner of employing compression. Figure 1 shows the strips of plaster passed around the chord and testicle;



Compression of the Testis.

figures 2 and 3, the strips placed at right-angles, to maintain the circular ones, and compress the lower part of the swelling.

The surgeon should return to see his patient a few hours after the application of compression. He will probably find that the size of the swelling has so far decreased that the adhesive plaster has become quite lax, forming a shell around the shrunk testicle. It is now necessary to reapply fresh strips of plaster, with the precautions alluded to above, until the swelling has completely subsided.

The patient may be cautioned, that if, during the night, pain should come on, it is better to remove the compression. This pain arises from the diminished size of the testis having allowed it to partially escape through the ring formed by the first strip of plaster, and thus irregular pressure is exerted on it.

With these precautions, compression is a most valuable means of relief in private practice, but it requires so much attention that it is not adapted to the out-patients who attend dispensaries or hospitals; and I remarked, in my visit to the French hospitals last year, that the treatment is not so generally employed as formerly—not that the French surgeons have less confidence in it, but practical experience shows them that inattention or carelessness may produce much mischief when the patient is not under the immediate eye of the surgeon himself. Cases have been cited of sloughing of the scrotum coming on; but this has depended upon the grossest negligence on the part of the patient or attendant, and tells, not against the plan, but its abuse. I can assure my readers that, with the proper precautions noticed above, the greatest benefit will result from its use.

It is, however, very prejudicial in all cases where inflammation is gaining ground, or when it has already become very severe; it is useless when there is great effusion into the tunica vaginalis, pressure then having but a slight effect on the epididymis. When, however, the fluid has been allowed to escape, compression becomes a valuable adjunct. It should never be employed when the chord is affected with acute inflammation, as we are unable, from its position, to compress it completely; and I may here repeat, that there are no means so useless or prejudicial as inefficient or unequal pressure. I may be expected to say a few words on the supposed *modus operandi* of compression, although, for the practical surgeon, it is sufficient to know that it is beneficial, and in what cases it should be employed. Compression here, as in many other cases, has been supposed to act by retarding arterial action, and not permitting so much blood to come to the part; support, it is said, is given to the veins, and if inflammation depend upon or be followed by an enlarged state of the vessels, it is not surprising that compression should be of benefit. Pressure, moreover, not only is stated to prevent the further deposition of fluids and solids among the tissues, but it is supposed to excite absorption of such matters as are effused and not yet become organized.

By employing compression, we rapidly get rid of those chronic enlargements of the epididymis which without it last many months, and the existence of which justly alarms a hypochondriacal patient; for, whatever the exact position of the deposite, it must impede the secretion and excretion of the semen, and the loss of the organ or diminution of its size may follow, unless this symptom be attended to; and we must further remember, that it is more difficult to remove all foreign bodies in proportion to the time they have existed in any part.

The effect of compression is so successful, that we now no longer find in practice those numerous cases of chronic affections of the testis which are so fully described in books, nor do we have recourse to the thousand and one remedies formerly employed, but which compression has superseded. The only cases that present difficulties in the cure, are those in which we suspect

tubercles, or in which previous disease has altered the structure of the part, or where stricture or gleet exists.

In all cases of chronic enlargement, the first thing I do is to pass an instrument to ascertain the condition of the urethra: if there be stricture, or an irritable condition of the canal, all other local remedies will fail, and our attention must be directed to relieve these lesions, the appropriate remedies of which have been already spoken of, and if at the same time compression be employed, the case soon gets well.

If we suspect tubercles, our treatment must be altogether changed, and the remedies proper for scrofula, which I need not here dwell upon, must be prescribed, and sea air recommended; but above all things, it is dangerous to treat such a case as syphilitic, the diagnosis of which will be fully entered upon in the section on that complaint, to which I must refer my readers.

Lastly, I must allude to the treatment of fungous excrescence of the testis, which in the present day is a very rare affection, and one which I hope will cease to exist in a few years. When called to such a case, I would advise the surgeon not to excite the prominent seminal tubes, nor to apply caustic or compression, but to divide the stricture formed by the tunica albuginea, and, having freely relieved the protruded mass of vessels, to compress them gently with strips of plaster, and no ill effects are likely to result. In these cases there is no fear of dividing the tunica albuginea, for we have seen that, in acute inflammation of the testis, it is the best and only way of curing severe cases; and in this affection, as the tunica albuginea has been already wounded, a little increased division can do no harm, and will allow of the return of the vessels. I may mention that I have reason to believe that a testis, very much compromised in this way, will perform its functions thoroughly, although not of the same size as the other. I lately had a patient under my care who had formerly suffered from this affection, and who came to me again with gonorrhœa, and the testis of the same side as formerly swollen, showing that at least inflammation will affect a testicle so diseased; and I think the functions in both organs are perfect—the anastomosis of the seminal vessels would lead us to expect this result.

SECTION XI.

IRRITABLE TESTIS.

THE complaint here spoken of is by no means a common one. During my studies in the French hospitals, I do not remember ever to have seen an affection of the kind, nor can I recollect M. Ricord having called our attention to the subject; but in private practice in London, cases come before us which bear unequivocal proof of the accuracy of Sir A. Cooper's description of the disease.

A patient complains of general or partial pain in the testis; he can not bear his trousers to touch the organ, nor will he willingly allow the surgeon to make an examination. I have generally found one testis alone affected. An examination discovers the affected organ larger than the other, and we find very frequently varicocele on the side where the pain is complained of. The general health of these patients is far from good; they labor under the different forms of dyspepsia, and day after day return to see the surgeon, with a whole list of pains and fears, often inducing the medical man to think he is treating some visionary malady.

Such, however, is not the case, and the complaint deserves all our attention

and sympathy for a patient, who really suffers without our being able to characterize the affection, otherwise than as a morbid sensibility of the organ. The cause is not easy to be ascertained; sometimes it follows inflammation of the organ, sometimes the passage of instruments, at others it results from venereal excesses, and formerly lasted for an almost indefinite time. The indications I follow in the treatment are, first, of a general nature. I prescribe for the dyspeptic, cold-bathing, the shower-bath, tonics, &c.; in fact, those remedies found useful in other nervous affections. But the greatest dependence I place on enveloping the testes in strips of mercurial, belladonna, and ammoniacal plaster; the pressure and the stimulating application appear to modify the sensibility of the organ, particularly when combined with change of air and attention to regimen. By these means you may alleviate the patient's sufferings, but the treatment must be continued for a long space of time, otherwise you run the risk of a return of the complaint as soon as the pressure is removed; still I have not seen atrophy of the organ, nor diminution in its functions. In cases which resist this treatment, the cause of the complaint must be sought for in the urethra or in the structure of the organ itself.

SECTION XII.

INFLAMMATION OF THE BLADDER.

AUTHORS who have specially treated of the affections of the bladder, divide them into acute and chronic, and speak of inflammation of the neck and fundus of the organ.

CAUSES.—Stone in the bladder, the passage of instruments, the extension of inflammation in gonorrhœa, may produce the disease in question, nevertheless in practice it is fortunately a rare disease; and when induced, depends generally upon some indiscretion on the part of the patient. I have had reason to think, in a few instances, that large doses of cubebes have induced the complaint; and Sir B. Brodie cites a case in which he thought even death was accelerated by the same cause. Strong injections, given in the inflammatory stages, may, I think, produce the disease, but I believe their influence has been very much exaggerated. The principal cause that I have seen most commonly give rise to inflammation of the organ, is indiscretion on the part of the patient, such as hard riding, catching cold, getting the feet wet, and venereal excesses during the course of a gonorrhœa; lastly, I would cite gout and rheumatism, particularly the latter, as one of the most common causes of inflammation of the bladder. During the past winter I have had several patients suffering from gonorrhœal rheumatism, and in almost all I have found more or less numerous symptoms of irritation at the neck of the bladder, and which it has been very difficult to relieve. Sir B. Brodie does not mention rheumatism as one of the causes; but at page 82 he says: "I have known much good to arise from the use of vinum colchici, thirty drops being given three times daily for three or four successive days." Dr. Prout says; "We also read of *rheumatic* and *gouty* inflammation of this organ. I have been informed that rheumatic and neuralgic affections of the bladder are well known, and not unsrequent in malarious districts bordering on the tropics, and I believe that I have seen a few instances of such affections in this country. In these cases it is probable that the muscular and nervous structures and their appendages are the chief seat of the affection. With respect to the gouty inflammation of the bladder, I believe there can not be two opinions; and if we take the matter for granted, we must suppose that such inflammation attacks in preference that peculiar structure

which is analogous to, or identical with, the structure attacked by gouty inflammation in other parts of the body. Whether the mucous membrane be the structure primarily attacked by gouty inflammation I do not know; I believe it is not: but that like the skin in other parts of the body, the mucous membrane (as in gonorrhœa, for instance) is only secondarily affected."—*Prout, fifth edition*, p. 367.

The slight information given us by authors who must have witnessed such large numbers of instances of affection of the bladder, strikes me as very singular, more particularly as in my more limited sphere I constantly meet with cases in which the complication with rheumatism arises, and I have already cited several instances in the course of the preceding chapters; it is, however, difficult sometimes to say whether rheumatism or rheumatic gout is a complication of gonorrhœa, or vice versa; they, however, do occur sufficiently often together to bear a particular relation to one another.

SYMPTOMS.—These have already been spoken of in treating of the complications of gonorrhœa, page 59; but I will again give a summary account of them. Pain of a dull heavy character is referred to the perinæum, extending to the rectum; pain may be complained of above the pubis, where pressure gives extra suffering. The desire to make water increases, in consequence of the bladder becoming inflamed, but no relief is felt, the patient complaining that he is unable to expel the last drops of urine; he continues to strain, but no urine comes, only a few drops, consisting principally of mucus mixed with blood, painful tenesmus arises in the rectum, and the sufferings of the patient are very severe. The urine is usually slightly turbid; even when first made it has generally an acid reaction, and on cooling* the sediment has an opaque semi-gelatinous appearance and gradually falls to the bottom, the deposit presenting the consistency of jelly, which on being shaken, becomes again diffusible in the urine, or in the more advanced cases assumes aropy consistence, forming such a tenacious mass that the vessel which contains it may be inverted without the semi-solid mass being disturbed; this mucous deposit will be alkaline, although the supernatant liquid is acid; generally, however, the urine in these advanced stages is alkaline. In affections of the bladder the color of the mucus may vary; it may be more or less clear and transparent, assume a yellowish or greenish color, or from containing blood, may be red, brown, or dark colored, and in the advanced stages, present an ammoniacal odor, or that peculiar sickly one characteristic of decomposing animal tissues.

The young surgeon in the commencement of his practice, must be careful in his diagnosis of inflammation of the bladder, and too great caution can not be exercised in deciding whether mucus is present in the urine. If healthy urine be allowed to cool in a glass tube, a small cloud of mucus will be seen suspended in the fluid in which little flocculi composed of the debris of epithelium will be entangled; under temporary causes the quantity of mucus may be increased, and the practitioner must not treat this as disease, although in many of these instances the mucus may fall to the bottom of the glass. Another error I find committed in practice, consists in concluding that a patient is suffering from inflammation of the bladder, because a deposit of what is called mucus falls to the bottom of the glass. In many cases of gonorrhœa, this deposit is nothing more than muco-pus, or pus which the urine in passing along the urethra carries with it, and deposits on standing.

* I have adopted a very good plan for examining the urine of patients, and it is one which I should strongly recommend to the notice of those who treat affections of the urinary organs. I have in my consultation room a little stand with half a dozen glasses of the shape of test-tubes, but made much larger; when I want to examine the urine I desire the patient to place one of these tubes in a little chamber utensil and to make water into the glass; I am thus enabled to obtain a specimen of the first flow of urine, and I may, if I please, collect the last drops, after allowing it to cool in the little stand, by pouring off the supernatant liquid, and examine at my ease the deposits, either chemically or microscopically.

It may, and often is, very desirable for the surgeon to ascertain the nature of these deposites.

My friend Dr. Griffith thus gives in his manual the tests for pus and mucus : " Pus is occasionally present in urine. When in large quantity, and unaccompanied by mucus, or when mixed with blood, it may be supposed to be derived from an abscess ; but when mucus is in excess, or has preceded the pus, most probably it is derived from the urinary mucous membrane. When present in urine, it renders that fluid albuminous, and gives a yellowish or greenish tinge to a sediment it composes ; it can be easily diffused through the urine by agitation, and may be readily distinguished from mucus by its want of tenacity or viscosity, and by the large number of globules which float in its albuminous liquid. When acted upon by caustic ammonia (or potash) it becomes converted into a viscid gelatinous mass."—*Practical Manual on the Blood and Urine*, part i., page 48.

" Pus is composed of two distinct parts ; one of which is liquid, the other consisting of minute cells or globules, and both of these are essential to the constitution of true pus. If attention be paid to this fact, there will be no difficulty in distinguishing pus from mucus. It frequently happens, however, that we meet with an excreted substance which does not yield these two constituents, but still has the general purulent appearance ; it contains the granular corpuscles in abundance, these give it the peculiar color, but the vehicle in which they are suspended is not albumen, or if any of this substance be present it is but a trace. Mucus here occupies the place of the true purulent albuminous vehicle ; the limpidity of pus being exchanged for viscosity and tenacity."—*Loc. cit.*, part ii., page 146.

" If mucus exist in considerable quantity in the urine, it can not be mistaken ; its semi-transparency, viscosity, and gelatinous appearance, being easily recognised. If pus exist in considerably quantity in the urine, it can not either fail to be detected with readiness, by the granular character of the deposite, its ready subsidence, and this in the form of a yellowish layer, generally above the mucus, if the latter be present. Moreover the granular particles are shown by the microscope to be those of pus ; the supernatant fluid being at the same time markedly albuminous, as proved by ebullition producing a white cloud, which is not dissolved by a drop of acetic or dilute muriatic acid. The potash or ammonia test can be of no service in those cases where there is doubt—generally those in which mucus is present in quantity and the detection of the presence of pus is required—because here there are already gelatinous masses in the liquid ; and it would be a matter of difficulty to decide whether the alkali produced more of them or not. The presence, therefore, of a granular deposite, readily diffusible through the urine, generally subsiding above any portions of mucus present, the latter being heavier, the recognition by the microscope of any particles of pus present, whereby any fallacy from the presence of epithelial scales is avoided, and the detection of the markedly albuminous state of the urine, will always render this an easy question. In these cases it must be borne in mind in the detection of albumen by an acid, that if the patient has been taking any resinous matter, as copaiba, cubebs, or spruce-beer, a deposite somewhat resembling that of albumen is thrown down ; in such cases, unless albumen be really present, ebullition causes no precipitate ; moreover the surgeon is led to discover the nature of the cloud at once, even if a knowledge of the ingesta is wanting, by the odor of the oleo-resinous matter simultaneously evolved on the addition of the acid."

Guided by these tests, the practitioner will often be enabled to decide if pus or mucus be present, but in other instances the urine may contain both of them ; and in these, fortunately for the patient, the treatment that is good for the one case is equally advantageous for the other. I think it, however, highly neces-

sary that the young practitioner should be put on his guard against these errors that he may very easily fall into.

If, however, it is not of so much importance, to distinguish accurately between pus and mucus, the same can not be said of the necessity of accurately distinguishing mucus from other deposites. The surgeon must be on his guard against mistaking a deposite of the phosphates for mucus. It often happens that these salts are thrown down in large quantities as the urine stands, and I find them not uncommonly mistaken by practitioners for mucus; and a patient has been supposed to be suffering from inflammation of the bladder, because the urine deposites thick mucus as it is called. My readers will pardon me, perhaps, if I make a few observations on this subject.

The phosphates, composed as they usually are of ammonio-phosphate of soda and magnesia, or the triple salt and phosphate of lime, are found frequently in urine, which when recently passed may be acid, although it will soon become alkaline. They are stated to be deposited in consequence of the solvent acid becoming neutralized, and hence these earthy salts are thrown down (as may be imitated by adding ammonia to healthy urine, when a deposite of the phosphates will occur). These earthy salts, then, may be mistaken for mucus or pus, presenting as they do a white appearance. The diagnosis, however, is easy enough, as the addition of a drop of any acid will cause them again to be re-dissolved, thus clearing up any doubt on the case.

In other instances, the deposites thrown down will consist of the phosphates entangled and mixed with mucus; and the urine will have a very offensive smell, and has often been mistaken for ammoniacal urine, whereas litmus paper will convince the practitioner that the liquid has an acid reaction, and I need not say that the prognosis will be far less unfavorable than if really ammoniacal urine existed.

The practitioner occasionally finds a deposite in the urine which he mistakes for mucus, and which really consists of spermatic fluid. In some instances where the inflammation has reached the orifices of the vesiculae seminales, these appearances in the urine are not uncommon, and deserve a few moments' consideration.

Notwithstanding my belief, expressed under the head of Spermatorrhœa, that discharges of semen are not so common as generally represented; still, no doubt can exist that semen in pretty considerable quantity may be occasionally present in the urine, and give rise to the mistakes above alluded to. On the diagnosis of this affection Dr. Bird observes: "If, however, we have a specimen of urine passed by a man which is cloudy and opalescent, reddens litmus paper, and does not become clear on the application of heat or nitric acid, the presence of spermatic fluid may be at least suspected, especially if the characteristic odor of that secretion be perceptible. Should a larger quantity of the secretion be present, it subsides to the bottom of the vessel, and may be recognised by its physical character. If mere traces of spermatic liquor only are mixed with urine, they may easily be detected by violently agitating, and allowing it to repose in a conical glass vessel for a few hours. On carefully decanting all the urine except the last few drops, the spermatozoa may be detected in the latter by the microscope. The addition of nitric acid will often produce a slight troubling in the urine."—*On Urinary Deposites*, page 271.

DIAGNOSIS.—Having described the symptoms of the severe forms of the disease, it is not my intention to dwell, at any great length, on the diagnosis in these instances, as the surgeon will not fail to characterize them when they occur; but I may mention that it becomes difficult, in many instances, to distinguish inflammation of the neck of the bladder and prostate,* as the two often exist together, or the latter masks the former, so that the surgeon will often fail

* See diagnosis of inflammation of the prostate, page 128.

in distinguishing one from the other. This is, however, of no great practical importance, as the same treatment is proper for both complaints, at least in the commencement. The diagnosis of the less severe forms of affections of the bladder does not appear so easy; and in practice I find great differences of opinion existing on what constitutes the affection in question, when it is not sufficiently severe to occasion a constant desire of making water, or the symptoms do not run high.

If a patient with an acute gonorrhœa is desired to make water into a glass vessel, and the fluid allowed to stand, the pus proceeding from the lining membrane of the canal will subside to the bottom of the vessel in very considerable quantity; the supernatant fluid may be clear or turbid, according to circumstances.

Should the discharge not be copious, the urine, on cooling, will have a semi-congealed appearance, and if the young surgeon forms his opinion at this stage, he will come to the conclusion that there is an unusual quantity of mucus in the fluid; but if he waits till the urine has stood in a cool place some hours, he will then find the deposite collected into a suspended cloud, or mass, which may, when shaken again, be mixed with the liquid. In some cases of gonorrhœa, I have witnessed large masses of mucus thus suspended, and I have been asked to leave off the treatment of gonorrhœa, which has been producing this affection of the bladder as it is called, and treat the inflammation of that viscus by bleeding and enemata. Now, in such a case as this, there is no inflammation present, and what has been taken for an abnormal quantity of mucus is only the usual amount, with which practitioners are not familiar. In other instances this supposed mucous deposite may, as I have stated at page 149, depend upon the presence of the earthy phosphates, or it may consist of pus which has been thrown down, the means of distinguishing which have been given above. (See page 147.)

The spermatic fluid, when existing in any great quantity, may be likewise mistaken for mucus; the microscope here, however, will come to our aid, and detect the spermatozoa motionless at the bottom of the glasses, for urine kills these little bodies, unless they are protected by pus.

Lastly, if mucus be found in any quantity in the urine, it does not necessarily follow that it is the result of inflammation. We frequently find an abnormal quantity arising from the affection presently to be described as irritable bladder. The following contrast of the symptoms will, in the words of Dr. Prout, generally assist us in our diagnosis: "Cystitis, or inflammation of the bladder, is accompanied by all the symptoms of fever, while spasm is not. Pressure increases the pain of cystitis, not of spasm. The pain is unceasing in inflammation, that of spasm comes on in paroxysms. The pain in cystitis is burning, throbbing, or lancinating; in spasm it is oppressive, dragging, and resembling labor-pains. The constitution of the patient also should be taken into account. In the robust and sanguine, cystitis is the more probable disease; in the weak and nervous, spasm. These differences will rarely fail to direct us in well-marked cases; but where spasm and inflammation co-exist, which often, as above-mentioned, is the case, it is always the safest plan to consider the affection as one of simple inflammation."—*Prout, fifth edition, page 400.*

TREATMENT.—The more urgent symptoms may be relieved by fomentations, and leeches in large quantities, say eighteen to twenty-four, to the perineum, or cupping-glasses may be employed. I seldom have recourse to general bleeding, as the disease in private practice rarely occurs in persons who could bear depletion to a great extent; and I usually find that the general constitutional disturbance depends upon the local ailment. Moreover, as gout or rheumatism so often complicate this disease, all heroic remedies are counter-

indicated. Constipation must at once be relieved, and tenesmus will be benefited by warm enemata of gruel. When the bowels have been freely evacuated, opiate enemata may be given, and afford the greatest relief. This plan by enemata, of giving sedatives is not, I think, sufficiently appreciated by English practitioners. Dr. Prout says, "The irritation of mucous membranes in general, and particularly the irritation of the mucous membrane of the bladder, &c., seems to be less under the local and direct influence of sedatives than pain and irritation in many other parts. Hence we can seldom do much toward allaying the irritation of the mucous membrane of the bladder without bringing the whole system under the influence of narcotics."—*Loc. cit.*, page 404.

The plan I recommend is as follows: After the rectum has been freely evacuated by means of warm water, I desire about an ounce and a half of warm gruel, containing sixty or eighty drops of laudanum, to be thrown into the gut by means of a small enema-syringe, and retained there; after eight or ten hours warm water enemata may be thrown up to relieve the bowels, or a gentle laxative may be given. This opiate enemata may be repeated as often as it becomes necessary. I know of nothing more certain in its effects than this excellent remedy, when properly employed.

Great relief will be experienced from very hot fomentations, baths, and rest in the horizontal position, with plenty of warm diluents, as barley-water, marsh-mallow or linseed tea, either plain or with the addition of gum tragacanth, and orange-flower water. The most intense symptoms rarely stand out against this treatment, but it must be persisted in for some days.

Sir B. Brodie places great dependence on calomel and opium, and the late Dr. Prout was in the habit of recommending in consultation this plan of treatment, but in many instances of very severe affections I have cured my patient without recurrence to mercury, except given in alterative doses, experience having taught me that the mineral has been unnecessary in inflammation of mucous membranes, and instead of abating, has often increased the secretion of mucus, which we are desirous of checking, particularly in the subacute cases. Neither have I derived the benefit I had been taught to expect from liquor potassæ and tincture of hyoscyamus, remedies which have been much vaunted in affections of the bladder; of course, it is of great importance that the urine should not be strongly acid, as this will further aggravate the complaint; but it is very injudicious to prescribe alkalies indiscriminately, as may be inferred from what was said at page 149; and the tincture of hyoscyamus is a very nauseous form of medicine, not often borne well by delicate stomachs, and should not be generally given; we may, however, prescribe the extract when it can be depended upon, in five-grain doses; if this be objected to, we know the advantages to be derived from opiate enemata, which I believe to be the best mode of prescribing sedatives. When it is thought advisable to employ opium internally, Battley's sedative solution or muriate of morphia may be given according to the urgency of the symptoms and the effects produced.

When the urine is strongly acid, we must render it alkaline by giving the bicarbonate or citrate of potash,* which are the best remedies for effecting the purpose. The following is the formula I frequently prescribe:—

R. Potass. bicarb.	gr. xx.
Syr. aurant.	3j.
Aqua destill.	3iss.
M. ft. haust. ter die sumend.	

* My readers will agree with me, I think, in appreciating the following observations, which my friend, Dr. J. W. Griffith, sent in answer to my queries as to the action of these salts on the economy, and which I insert in his own words:—

"It is a thoroughly-established fact, that the citrate, tartrate, malate, and acetate of potash and soda, when taken internally, are converted in their passage through the system into carbonates of their respective bases, at the same time rendering the urine alkaline, and causing a deposit of the

I generally however, prefer giving the alkalies in a state of effervescence; they are far more agreeable to the stomach of the patient, and the neutral salt, the citrate of potash, is found to be converted into the carbonate in its passage to the bladder.

R. Potass. bicarb.....	3j.
Syr. aurant.....	3j.
Aqua destill.....	3iss.

M. ft. haust. c. pulv. acid. citrici. gr. xiv. in statu effervescentia bis terve quotidie sumend.

This method of giving citric acid is a very good one, but to many palates lemon-juice is more agreeable; and I prescribe it in the following manner:—

R. Potass. bicarb.....	3j.
Syr. aurant.....	3j.
Aqua destill.....	3iss.

M. ft. haust. c. succi limonum coch. uno magno bis terve quotidie.

These various means will be found far preferable to giving liquor potassæ, or the carbonate in a draught, combined with tincture of hyoscyamus, the usual way in which these remedies are combined.

The observations made at page 149, have doubtless prepared the reader for the statement that instead of prescribing alkalies, great benefit will be derived from the mineral acids, and these will be best given with the infusion of quassia, as a diet drink; or the same effect will be produced by prescribing them in the following manner:—

R. Acid. nitrici. dilut.	
— hydrochlorici.....	aa gutt. xx.
Aqua.....	3iv.
M. ft. mist. sumat 4tam partem bis quotidie.	

The quantity of the acids may be gradually increased to one dram of each of those above prescribed.

Having alleviated the urgent symptoms by the means just spoken of, the surgeon may now turn his attention to the discharge from the urethra, which often returns; and it becomes a question what is to be done with it. I have no hesitation in prescribing copaiba in capsules; and when the discharge has nearly ceased, a mild injection is never followed by any ill consequences; on the contrary, I find the best way of relieving irritation of the bladder, is to cure as speedily as possible the discharge from the urethra, which was the first cause.

In ordinary cases this is not, however, so easy a task, when the complaint has reached the posterior portion of the canal, as is shown when the urine is loaded with those little vermicelli-looking bodies, so often alluded to in these pages. If rheumatism be present, the appropriate remedies must be prescribed, particularly the acetous extract of colchicum; but let not the surgeon anticipate too much success. When rheumatism is a complication, I am little sanguine

earthy phosphates. Hence, if it be required to render urine alkaline, either of the above salts may be exhibited as a substitute for the carbonate or bicarbonate of the same base.

“ Regarding an alkaline condition of the urine, it must be borne in mind that vegetable matters of all kinds have a special tendency to produce this condition, on account of their mostly containing one or other of the above salts; beer or wine is quite sufficient for this purpose. In irritable and nervous subjects, there is a great tendency to the production of an alkaline state of the urine. The most troublesome cases are those, however, in which the alkalinity is produced by a morbid secretion from the mucous membrane of the bladder, as from the presence of a calculus, or simple inflammation of the bladder. If there be any active irritation, it is frequently found, as was first distinctly pointed out by Dr. G. O. Rees, that while the exhibition of acids increases the irritation and urgency of the symptoms, alkalies will restore the acidity of the urine, by remedying the morbid action going on in the mucous membrane, and thus produce permanent relief. In other cases, however, alkalies make matters worse; and benefit is derived solely from the exhibition of acids. Mr. Alexander Ure has recommended benzoic acid in these cases; after it has been taken internally an increased amount of hippuric acid is found in the urine; but it has not generally been found of much service.”

of speedily curing the complaint, but for further particulars on the treatment of this form, I must refer my readers to the chapter on that subject.

The chronic affection must be treated on a similar plan, but modified according to circumstances. One author speaks highly of pareira brava; another recommends uva ursi; a third vaunts diosma,* as remedies for affections of the bladder. I have tried them all, and have been disappointed, and doubt if time has not done more than the infusion or decoction. As a placebo, to those who will take physic, any or all may successively be prescribed; but I have much more confidence in the gum resins, and I usually recommend spruce beer made without ginger, as a diet drink, taken to the amount of two or three bottles a day, care being taken to employ good spruce, for there is much that is valueless; this beverage is very palatable, and in summer very pleasant. I have likewise occasionally prescribed a very pleasant drink, containing essence of spruce and lemon-peel, and one or other of these beverages has now superseded those nauseous old-fashioned remedies which have so long deluged the delicate and fastidious stomachs of the London dyspeptic.

Spruce Drink.

R. Ess. spruce,	3 oz.
Lemons,	3 sliced.
Sugar,	1 lb. 12 oz.
Boiling water,	2 gals.

Let stand till cold, filter, and bottle.

In chronic inflammation of the bladder, when the mucous membrane secretes thatropy, thick, tenacious secretion spoken of above, and when uncomplicated with stone, stricture, or affection of the prostate, the greatest relief will be found from injections (by means of a double catheter) of cold water applied every other day or oftener, if reaction does not take place. Sir B. Brodie recommends an injection of nitric acid, in the proportion of ten minims of the dilute nitric acid to two ounces of water.

Provided these means fail, and unfortunately failures are not uncommon, we must have recourse to the following plan of injecting the bladder with nitrate of silver.

To effect this, I pass a gum-elastic catheter into the bladder, and draw off the urine, and then, with a glass syringe, which fits accurately to the instrument, I inject the whole of the following solution into the viscus:—

R. Argent. nitrat.	3 ij.
Aqua destil.	3 iv.
M. ft. inject.	

The immediate consequences are, increased pain, which for the moment is very severe, the urine that is first passed is bloody, and some tenesmus is experienced. In a short time, however, these symptoms abate on the patient keeping his bed, and paying great attention to his diet; at first no liquids should be taken, nor for the first few hours preceding the operation; subsequently the usual quantity of tea or barley-water may be indulged in, and the various balsams, particularly turpentine or spruce, should be prescribed.

In a very few days the urine will contain less of thisropy mucus, and ultimately none will be noticed; in other cases the injection may again be resorted to at the end of four or five days, and repeated until a complete cure is effected. We rarely or ever observe any of the ill consequences which probably might be expected to arise when injections are thrown into this important organ.

* Dr. Prout says, "They are of very little use when the irritation borders on inflammatory action on the one hand; or when the urine is decidedly alkaline on the other, and the beneficial effects are chiefly confined to the intermediate stages of the disease."—*Loc. cit.*, p. 404.

SECTION XIII.

AFFECTIONS OF THE VESICULÆ SEMINALES.—SPERMATORRHOA.

I HAVE already had occasion more than once to observe that an author, in following a plan which he may have traced out, is obliged sometimes to deviate a little from his arrangement, in order to collect under one head or title, matter upon which some differences of opinion may exist as to whether it should find place there or otherwise. I feel I have arrived at a point where some explanation is necessary to convince the reader that the heading of this chapter is the only one I could adopt in order to make it tally with the arrangement of other sections, and yet enable me to include all the heterogeneous but important facts and statements which it will be my purpose to introduce to his notice. It may be truly said that affections of the vesiculae seminales form a small part of this section, that a great deal has in fact no very definite relation to any section; that it is made up of interesting particulars, drawn from a variety of different books, as well as my own observations. I plead at once guilty to the charge and can assure my reader, that although thus constituted, I consider it one of the most important, interesting, and laborious sections it has been my task to write. I am well aware it treats *de omnibus rebus et quibus-dam aliis*, but still I hope that a method has been for the first time pursued which will enable the *reader* to follow the *author*, and clearly understand one of the most distressing and perplexing diseases which affect the genito-urinary organs. The surgeon who peruses the following pages will notice symptoms, causes, pathology, and treatment, arranged in regular order, but the author to effect this has often been puzzled to know how he should classify the materials. Quotations are freely extracted from M. Lallemand, without the assistance of whose book this article could never have been penned; but although arranged here under the proper heads, a mere paragraph has often been taken partially perhaps from one volume, partially from the other, of a work containing seventeen hundred pages, and of which the author can not speak in too high terms, but one which he must candidly acknowledge knows no equal in the difficulty with which its valuable contents can be analyzed. Seldom is a paragraph to be found which can be taken out and inserted as a quotation. The professor of Montpellier appears as if he had been afraid of being robbed, and had put difficulties in the way of the plagiarist which would be almost insurmountable. However, after taking notes as I went, analyzing his observations, and then re-arranging his facts, I have at length effected the purpose I had in view, and I hope I have employed the language which the most scrupulous can not object to. I am well aware that there are members of my profession who object to the subject of spermatorrhœa being treated at all, and that there are those who object to have its symptoms examined or the affection alluded to, as they even doubt its existence. The recent disclosures which have occurred in one of our public establishments, fully prove (if that were wanted) that masturbation in this country is not so uncommon as some persons would make us believe; still I acknowledge I have had many misgivings, whether or not I should have treated the subject. The frequent request of medical men has altered my intention, particularly as I have been often told that no book exists to which the practitioner, who is only occasionally consulted on account of these distressing complaints can refer, that by this neglect of the profession, the subject has become the domain of the veriest quacks, that patients, fully aware of this, apply to these parties in the belief that the complaints are neglected by the well-educated surgeon. Others, who have wished me to give the result of my experience on spermatorrhœa, have endeavored to overcome the personal dislike

I might have to treat the subject (from liability of having my motives misconstrued), by suggesting that I was guided by a false delicacy, a culpable moral cowardice, which was most inconsistent in one who aspired to guide the opinion of practitioners. Urged by the repeated requests of those who are pleased to think that I possess information which may be useful to my profession, I have yielded to their solicitations, and I hope that the end I have had in view, and the chance of the good I may effect, as well as the sufferings I may mitigate, will be considered as sufficient to authorize me in undertaking a task which I had commenced with reluctance.

In writing this section I have preferred—as often as it lay in my power—giving the freest translation from the work of Lallemand. More than once in correcting the following pages I have doubted whether, owing to the peculiarity of the expressions I have been compelled to use, and the extreme delicacy of the subject, I should not even have expunged several passages, which, however, I have definitively retained, considering that this volume is written solely for my profession; and experience has taught me that patients who consult practitioners on these peculiar complaints are singularly inquisitive on all the questions here treated, and I firmly believe that the confidence inspired has depended upon replying to off-hand questions, which those not called on to treat these complaints would be perhaps unprepared to answer.

DERIVATION AND DEFINITION.—Surgeons in speaking of spermatorrhœa (derived as it is from *Σπέρμα, semen*, and *ῥέω, to flow*), ought to confine the term to emissions of spermatic fluid* taking place without the will of the patient, and in sufficient quantities and at such short intervals as to produce local and constitutional disturbance, to be mentioned presently; in addition to this, the fluid so emitted should contain spermatozoa.†

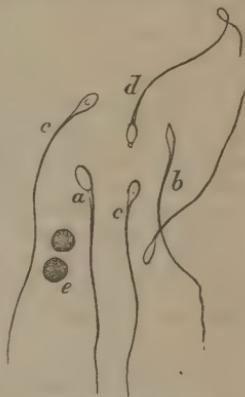
* "The seminal fluid secreted by the testicle is one of those secretions in which a process of development is continued after its formation by the secreting cells, and its discharge from them into the tubes. The principal part of this development consists in the formation of the peculiar bodies named *seminal filaments, spermatozoa (spermatozoids)*, the complete development of which in their full proportion and number is not achieved until the semen has reached, or has for some time lain in, the vesiculae seminales. Earlier after its first secretion, the semen contains none of these bodies, but granules and corpuscles (*seminal corpuscles*), like large nuclei enclosed within parent cells.

"Respecting the purpose served by these seminal filaments, little that is certain can be said. Their occurrence in the impregnating fluid of nearly all classes of animals proves their essentiality to the process of impregnation. They have been sometimes regarded as highly organized, and as, in some sense or other, the materials or organs out of which the new individual is begun; by others they are considered as a kind of parasitic animalcules. But probably all such theories of them are erroneous. Their want of structure and their development in cells, not by generation or succession, are inconsistent with the notion of their being in any sense distinct animals; neither is there evidence for believing that their entire substance is employed in the construction of the embryo. It is not safe to assume more than that they, like the blood corpuscles and the corpuscles of other secretions, elaborate the fluid in which they are placed, while they themselves are being developed and growing; they may therefore be regarded as a kind of floating gland corpuscles."—*Kirke's and Pagel's Physiology*, p. 610.

"That the spermatozoa are the essential elements of the spermatic fluid, has been reasonably inferred from several circumstances; such as their absence or imperfect development in hybrid animals, which are nearly or entirely sterile. Regarding the uses of the other constituents of the semen, no sufficient account can be given."—*Carpenter's Human Physiology*, p. 681.

"High and low temperature causes the motions of spermatozoa to cease. The spermatozoa will live, according to Donné, in blood, milk, or mucus. Their death, when mixed with saliva or urine, which Donné observed, must have arisen from other accidental circumstances; for Lamperhof observed them to continue their motions for a long period in saliva, and Wagner makes the same statement with respect to urine. In very acid mucus of the vagina, or very alkaline mucus from the uterus, they very quickly die, according to Donné's observation."—*Müller*, vol. ii., p. 1475.

† Lallemand says: "I shall call spermatorrhœa every abundant seminal evacuation, in whatever manner it may take place."—*Des Pertes Seminales*, vol. i., p. 7.



HUMAN SPERMATOZOA.

Magnified rather more than 400 diameters.

- a, One presenting the flat surface
- b, One lying edgewise.
- c, Appearance, supposed to be a
- d, Peculiar appendage attached to
- e, Seminal granules.

An occasional emission at night, the consequence of erotic dreams, is by no means to be classed under this disease. In a state of health, seminal emissions are frequently the results of continence, and do not necessarily require to be interfered with; but when they recur frequently, attention must be paid to them, lest they degenerate into one of the forms to be hereafter spoken of.

SYNONYMOUS TERMS.—The disease thus characterized is known by many other terms, such as “seminal emissions,” “nocturnal” or “diurnal emissions,” “pollutions,” “wet dreams,” “masturbation,” “onanism,” &c. A few words may not be out of place on each of these expressions.

The term *Seminal Emissions* merely expresses the fact that emission of semen takes place: still it has by constant use been brought to mean in general parlance that such evacuation of semen occurs in unusual quantities, amounting to excess, or that the secretion is emitted at unseasonable times.

Nocturnal Emissions.—This word likewise expresses the fact that the emission takes place at night; it generally happens during sleep, and occurs with, but does not depend upon, erotic dreams, although the two often coincide. (See page 164.) Such emissions are usually attended with agreeable sensations; in other instances emission of semen may be unattended with lascivious dreams, and the patient may not be aware of its occurrence until he notices it on his shirt in the morning, or finds it at the orifice of the urethra on waking, in the form of a drop of viscous matter which can be drawn out, and forms a frothy soap when rubbed between the fingers, possessing the peculiar smell of semen.

Diurnal Emissions.—These differ from the last, inasmuch as they occur in the daytime. They are at the commencement excited by lascivious ideas, toy ing with women, and are accompanied with spasmodic movements and pleasurable sensations. At a later period of the affection, however, semen passes away in the daytime without these causes of excitement—without convulsive movement or pleasure; in fact, the patient is often unaware that he loses semen, unless his attention is called to the fact that during defecation or straining in making water, semen passes. In other instances, diurnal pollutions consist in semen not exuding from the orifice of the urethra under excitement, but passing back into the bladder, there to be expelled with the urine, in which it may be detected.

Pollutions.—In the course of this and other treatises the word will be employed almost synonymously with “emission.” Thus we may have nocturnal or diurnal pollutions, although it is by no means necessary that they should result from masturbation, notwithstanding they may have originally signified, that, by manual manœuvres, a man polluted himself. Whatever the original signification, this term is no longer confined to such manipulation followed by ejaculation.

Wet Dreams.—It is unnecessary to allude to this term further than to say that it exactly corresponds with the term “nocturnal emission.”

Onanism.—Lallemand says: “The words ‘onania,’ ‘onanism,’ the vice or crime of *Onan*, are terms now generally received, and we feel the necessity of employing synonyms in writing on such a subject; nevertheless I regret employing expressions which are founded on error.” If the curious reader will, however, refer to volume i., page 316, of Lallemand’s work, he will find proof that this crime was not exactly that which is signified by our term “masturbation.”

Masturbation, like the word “*chiromania*,” can properly be applied only to emission or ejaculation produced by titillation and friction of the virile member with the hand; and in the course of the next few pages such will be the meaning of the term: but, like all the other words above spoken of, use has given it a larger signification, and it may be, and often is, now used to express ejaculation or emission attained by almost any other means than that of the natural

excitement arising from sexual intercourse, which I do not wish here to particularize.

Having made these observations on the terms which will be employed in the course of the following pages, I shall, in the first place, allude to—

SPERMATORRHœA IN THE CHILD, AND MASTURBATION.

Before doing so, however, it may be well for me to say a few words on the normal functions of the genital organs.

At or about the period of puberty (which will vary according to climate, education, and temperament), changes take place in the boy too well known to require notice here. In a natural state, the instinct of the generative functions keeps pace with the physical development of the individual, or occurs later: for, as Lallemand has so aptly observed, "The economy only occupies itself with the reproduction of the species when it has provided for the conservation of the individual."—(Vol. iii., p. 466.)

It is fortunate for the individual when the physical development precedes that of the sexual ideas, *les idées génératives*, as Lallemand calls them.

"I have," says the professor of Montpellier, "shown that the sexual ideas may become developed many years previously to the evolution of the genital organs, so as to keep up a *convoitise érotique* purely intellectual and disproportionate to the sexual requirements. I ought to mention that it is these precocious individuals who are most sensitive to the diminution of their virile powers."—(Vol. ii., p. 37.)

With persons of strong physical development, the surgeon who investigates spermatorrhœa will have little to do; erotic excitement is dormant in them until called into life by some tender attachment. Compare such a boy with another precocious lad of the same age: the latter will evince, long before puberty, an instinctive attraction toward the opposite sex; and if such instincts are not at once checked, the boy will commit acts that are so vividly depicted in J. J. Rousseau's confessions, and in many passages of M. Lallemand's book, but which, for reasons which must at once occur to the reader, I have no wish more minutely to particularize.

Lallemand adds: "It follows, as a scientific consequence from all these facts, that in a large number of children the sexual instinct manifests itself with great energy many years before the evolution of the genital organs has commenced."—(Vol. i., p. 222.)

When such a boy goes to school, his elder associates may initiate him into the habit of masturbation,* which he takes too soon and easily. In such a case, what at first was done because other boys did so, gives him no pleasure, but soon it affords gratification, and becomes a confirmed habit. The consequent symptoms are at first very slight, but sooner or later, if the habit is continued, they become aggravated, and are thus described by Lallemand: "However young the children may be, they get thin, pale, or irritable, and their features become haggard; their sleep is short, and most complete marasmus comes on; they may die if their evil passion is not got the better of; nervous symptoms set in, such as spasmodic contraction, or partial or entire convulsive movements, such as epilepsy, eclampsy, and a species of paralysis accompanied with contractions of the limbs."—(Vol. i., p. 462.)

Provided the vicious habit is left off, nature soon repairs the mischief, which

* "Books treating on this subject are unfortunately too full of accounts of the habits of such children. Parent Duchatelet relates that a child, since the age of four years, had been in the habit of abusing its powers with boys of ten or twelve, and yet it had been brought up by a respectable and religious woman."—*Annales d'Hygiène Publique*, tom. vii., partie 1832, p. 173.

appears to act principally on the nervous system,* for in such boys there is no loss of semen. If, however, masturbation is continued, nature replies to the call of the excitement, and semen, or something analogous, is secreted; occasionally the excretion of this gives intense pleasure, and the habit is now engrafted on the boy. His health fails, he is troubled with indigestion, his intellectual powers are dimmed, he becomes pale, emaciated, and depressed in spirits; exercise he has no longer any taste for, and he seeks solitude. Let those who would read an eloquent and able description of the symptoms, consult J. J. Rousseau's "Confession," p. 366. At a later period he can not so easily minister to his solitary pleasures, and he excites his organs the more, which flag under the accustomed stimulus; he becomes shy and timid, particularly in the presence of women. It is not my intention to carry this picture of a youth who gives himself up to the vicious habit further; and I shall now turn to the changes which, as medical men, we are called on to notice.

At first we remark some irritation of the canal—pain may occur in making water, as well as a frequent desire to empty the bladder; the opening of the meatus is red, and ejaculation, which before took much friction to excite, now takes place immediately; the secretion is watery, and even slightly sanguinolent, and emission is attended with spasm. We may have a sense of weight felt in the prostate, perinæum, or rectum, and anomalous pains are often complained of in the testes. Nocturnal emissions are very frequent, excited by erotic dreams; these at first are attended with pleasurable sensations, but later the semen passes away and the patient is only aware of the ejaculation taking place by finding himself wet from the overflow of the secretion. In other instances the semen does not pass in jets, but flows away imperceptibly; in some instances it makes its way into the bladder, to pass out with the urine. On cross-examining other patients, emissions do not occur; but on going to stool, or on the last drops of urine passing from the bladder, a quantity of viscous fluid, varying from a drop to a teaspoonful, dribbles from the end of the penis, and if collected, as recommended at page 164, or allowed to fall on a piece of glass and exposed to the microscope, furnishes, in greater or less numbers, the spermatozoa seen in the wood cut on page 155.

This vicious habit having impaired the growth, health, and intellect of the patient, ceases often to be further indulged in, because pleasure is no longer derived from it. The drain on the system; however, as I have stated above, continues, and what depended at first on an artificial excitement, is kept up by the irritation or inflammation of the urethra, vesiculæ seminales, and spermatic ducts. The irritation of the testes causes badly-eliminated semen to be secreted. This, instead of being retained in the natural reservoirs, the vesiculæ seminales, to undergo changes there, the most important of which seems to be elaboration, is at once emitted, because the vesiculæ are in a state of irritation and can not bear the presence of the liquid, which is probably more irritating than usual, resembling the irritability often seen in the bladder, and which irritability appears more or less general. I may mention here that no pleasurable sensations occur in the expulsion of this ill-conditioned semen. This may depend upon over-abuse of the sensations, which become blunted; but Lallemand thinks that pleasure is only felt when well-developed semen is emitted. The patient is now reduced to a state of impotence, the symptoms, effects, and consequences of which, we shall fully detail in the next section.

* Lallemand admits that in children it is not the loss of semen which can produce the usual effects of spermatorrhœa, but that the symptoms must depend upon the influence exercised on the nervous system, what he terms the *ébranlement nerveux épileptiforme*—the loss of nervous power which follows over-excitement, tickling, or spasmodic affections, in young and susceptible children, and which may produce such a perturbation of the nervous system as to occasion even death, an instance of which he gives, and which he attributed to the effect produced on the brain by repeated convulsive shakes similar to those which susceptible subjects receive when the soles of the feet are tickled.—(See Lallemand, pp. 467, 468.)

SPERMATORRHœA IN THE ADULT.

Immoderate loss of semen may depend upon and be also brought about by a variety of causes, and this brings me to consider the subject in a general point of view. This division is the more necessary, as it will enable me to collect together the variety of interesting facts which are scattered through the pages of M. Lallemand's work, and connect them with my own views.

PRELIMINARY OBSERVATIONS.—Speaking of the normal functions of the generative organs in the adult, Lallemand says: "From the moment the testicles acquire their perfect development, to the period when the secreting function ceases from old age, secretion of semen is always taking place; it may be increased or diminished, but it is never altogether suspended as long as the tissues preserve their integrity."—(Vol. i., p. 404.)

In this respect man differs from nearly all animals, which, for the most part, have the rutting season; if, however, it is only at particular times that the brute indulges in connection, his procreative power is enormous in proportion to that of man in a given time; a ram has been known to tup one hundred ewes in a single night; and physiologists are well aware that the testes in birds enlarge* very considerably about the period when the breeding season arrives. Lallemand thinks that this depends upon the odoriferous secretions of the female, which, by exciting the brain of the male, cause that impetuosity and vigor well known to all who keep entire horses.

The seminal fluid thus constantly secreted in man, passes on to be deposited in the vesiculae seminales, from which it is expelled in the act of emission when the generative function is called into action. In the continent man, what becomes of this stored-up secretion? Messrs. Paget and Kirkes say: "The seminal fluid is probably after the period of puberty secreted constantly, though, except under excitement, very slowly, in the tubules of the testicles. From these it passes along the vasa deferentia into the vesiculae seminales, whence, if not expelled in emission, it may be discharged, as slowly as it enters them, either with the urine, which may remove minute quantities mingled with the mucus of the bladder, and the secretion of the prostate, or from the urethra in the act of defecation."—*Physiology*, p. 611.

In regard to this question, I may state that my friend Dr. J. W. Griffith has examined, at my request, a large number of specimens of urine, and in a note received from him he says: "Upon the other point, you can state thus in answer to the question regarding the presence of spermatozoa (as the evidence of the presence of semen) in the urine. In the examination of very large numbers of urines, I have never found spermatozoa without being able distinctly to trace their origin to emission."

I am unaware on what evidence Messrs. Paget and Kirkes found their assertion, but after the observation of Dr. Griffith, made with particular reference to discover its existence in urine, did semen pass off in this way, I must hesitate in forming any conclusion: however, I believe that in continent men, and persons whose attention is turned to other subjects, the secretion of semen is very slow, and their urine is not therefore likely to contain spermatozoa, which may in some degree account for Dr. Griffith's negative proofs. I do not believe that absorption of semen to any great amount can take place into the system after it has been once secreted; and it must still remain a doubtful question how nature frees the system of an inordinate quantity of semen. It however follows from a consideration of the above remarks, that emission, up to a certain extent, must be considered a healthy evacuation, it is only against the abuse that we have to guard. Now, although the testes may secrete the semen slowly, still

* This periodic enlargement of the testes, however, I believe does not take place in animals having pendulous testes.

at the period of puberty, numerous causes may arise which must increase the quantity furnished; and if this secretion can not be absorbed in any quantities, it must be got rid of by emissions. Probably when the vesiculae seminales are full, defecation or straining in emptying the bladder, may press the semen out of these reservoirs, not at all times, but occasionally when full and in the natural state. Lallemand thinks that the pleasurable sensations which attend connection depend upon the passage of well-formed semen out of the vesiculae. My readers, having now been made acquainted with the normal functions of the generative organs, will, I think, be better prepared to understand the subsequent pages on the subject of what spermatorrhœa really consists. And first let me treat of the

CAUSES.—I have already spoken of masturbation, and shall not here return to it. In the adult it is surprising how many causes we may meet with, particularly when there exists any *predisposition*, such as a highly imaginative mind, a delicate constitution, or a naturally excitable disposition, which may have been pampered by a course of reading imaginative works. I believe, however, that some generative organs are naturally delicate, and susceptible of easily exerting an undue action.

Lallemand says: "The vesiculae seminales take on the habit of contracting themselves under the influence of excitement less energetic than usual, and quite abnormally so. In such cases a full bladder or rectum, a bed too warm or too soft, lying on the back, warm or exciting drinks, &c., provoke emissions more readily than they ought. It is in such instances that the intimate and reciprocal connection between the vesiculae seminales and brain produces lascivious dreams, *les plus désordonnés*, under the slightest direct or indirect excitement of the genital organs, and inevitable pollutions from the reproduction of all the ideas which are connected with those of generation."—(Vol. ii. p. 337.)

Lallemand thinks that the brain* has a great influence, as a cause, in inciting or exciting spermatorrhœa. He says, "Its action may precede that of the sexual organs as well as survive them, and be predominant."

"This preponderance of the sexual over the material instinct announces itself, usually, at a very early age. These children that we have seen taking notice of women, five, six, or even ten years before puberty commences, evince during the remainder of their lives that susceptibility toward everything which can provoke or recall erotic ideas, be it that the impression arises from the sexual organs or the senses. They retain the most vivid and lasting recollection of them. Their imagination seems to fondle them, turning and re-turning them in every sense. Voluptuous images occur during the most grave thoughts, trouble all their meditations, and pursue them even in their dreams. They desire every woman, and their passion for her is rapturous, but the virile power does not come up to the immensity of their desires. The venereal act tires and unnerves them; they feel this, but are drawn on in spite of themselves, and give themselves up to the indulgence as far as it lies in their power. There are some who have no more power over themselves than the insane. When they feel themselves exhausted they make the wisest resolutions; they however break through them, knowing at the moment what ill consequences will follow."—(Vol. i., page 611.)

* "Gall and other phrenologists have constantly regarded the cerebellum as the organ of physical love, the *legislator* of the sexual functions. This is the point of doctrine upon which they have shown the most unanimity; it is the one they conceive to be best established; it is the hypothesis which appears to be most probable."

"It follows, from all these facts, that the function of generation does not merely consist of instruments necessary for the accomplishment of sexual intercourse, but that another organ must receive the sensations coming from these parts, and direct their functions; that these two systems exert on one another a reciprocal action, in which the nervous agent may preponderate in a constant or accidental manner, according as the sexual passion is developed prematurely or in an exaggerated manner, or enjoys momentarily extraordinary activity."—(Vol. ii. p. 42.)

Among the *direct* and *exciting causes* I need only allude to haemorrhoids, fissures in the anus, ascarides in the rectum, a long prepuce, and accumulation of secretion between the glans and prepuce. Skin affections, violent horse exercise, abuse of alcoholic drinks, excessive continence, toying with women without gratification of the desires, are among the most common causes to which the complaint is attributed with great reason by those persons who labor under spermatorrhœa. But the most frequent cause, next to gonorrhœa and gleet, which produces chronic inflammation of the genito-urinary apparatus is venereal excess; and this brings me to speak of what is meant by that term.

Lallemand says: "Immoderate use of a thing useful within proper limits is *excess*, and consequently *injurious*."—(Vol. i., page 598.) "When the desires are only stimulated by the presence of semen, they will become pacified the moment the want has been satisfied, and they do not again arise until the loss has been repaired. We thus see that true excesses will never occur, unless other causes determine too frequently a return of the act. We can easily conceive, on the other hand, that repeated excesses are almost inevitable, when the desires are disproportioned to the real wants."—(Vol. i., page 613.)

"It is difficult," says the same author, "to judge *à priori* of the *real wants* of each individual, since the frequency and duration of erections, the ardor of venereal desires, and the phenomena observable in the different functions of the economy, may induce a false valuation. This, however, will not occur if we are content to appreciate the wants of the genital system by the *immediate* effects of the venereal act. Then it will be always easy to foresee the ulterior consequences which we may expect from renewed sexual intercourse.

"The following are the signs it is impossible to mistake, and which are applicable to all cases:—

"When connection is followed by a joyous feeling, a *bien être général*, as well as fresh vigor; when the head feels more free and easy, the body more elastic and lighter; when a greater disposition to exercise or intellectual labor arises, and the genital organs evince an increase of vigor and activity, we may infer that an imperious want has been satisfied within the limits necessary for health. The happy influence which all the organs experience is similar to that which follows the accomplishment of every function necessary to the economy.

"Every time, on the contrary, that connection is followed with a feeling of sadness, of malaise, of fatigue or satiety; on each occasion when a feeling of heaviness in the head is manifested, a disposition to sleep or repose, of dullness of the intellect, of indisposition to exercise, and want of decision supervenes, we may affirm that the act has been too often repeated, or at least exercised under unfavorable circumstances; and the subject of such feelings will not be deceived, although more or less energetic erections should manifest themselves a short time after; for they (the erections) will be occasioned by the commencement of irritation, and not by the return of the *want*.

"It is only when the act is followed by all these phenomena of languor, that we may say with reason, *post coitum animal triste*; it is then alone injurious. In fact, sadness, regret, and ill-humor, never manifest themselves except when the act has been too frequently repeated, or out of season. This moral state will suffice to point out that there has been *excess*, or it has been *inopportune*; which amount to one and the same."—(Vol. i., p. 601.)

Different constitutions bear venereal excesses in a very different manner. Lallemand says: "I have met with men who have given themselves up early in life to the greatest abuses of masturbation, and who have subsequently had many mistresses at the same time, and who, in spite of such a mode of life, have been capable of continuing it at sixty years of age without their health suffering. I have seen others the victims of most obsti-

nate nocturnal and diurnal pollutions, following the slightest errors of their youth.

"These differences do not by any means coexist in a constant manner with those outward characters which announce the predominance of one of the elements entering into the composition of all organs, still less with the development of the frame or muscular system. Thus with the sanguine, lymphatic, or nervous temperament, with a robust or delicate constitution, the sexual organs may present all the varieties of volume, power, and activity."—(Vol. i., p. 609.)

We must not lose sight, I think of the fact, that in a state of health and under proper excitement, connection may be indulged in to an almost incredible extent, as stated by Lallemand, without any ill effects; this is the rule; need I remind my readers, that among brutes a stallion is allowed to cover seventy mares in his season of two or three months; in all these cases the health and constitution are good, and the nervous system is duly excited; but under opposite circumstances no such results can be expected. It is a fact so generally known, that the reader scarcely need be more than reminded of it, that one nocturnal emission often weakens the subject of it much more than connection repeated several times the same night; and that erotic dreams attended with pleasure leave less weakness than when gratification is not derived from it.

Explain this as we may, the facts holds good under other circumstances, for

sons will undergo great exertions and perform extraordinary feats when inspired by hope, and preceding success; we may say such results depend upon nervous influence, and others call it courage; persons so situated are said to have a good tone of the system; that reaction takes place readily; and doubtless the brain has a great influence on the results we are describing, as well as in supporting the loss of semen which some systems have the power of renewing much more readily than others. "To sum up," says Lallemand, "whether it is that erotic excitement proceeds from the cerebral system, *des passions de l'âme, &c.*, or whether it depends on well-elaborated semen, *on the state of the sexual organs, or on the state of the body, &c.*, emissions accompanied with the most energetic phenomena, are the only ones which can be useful or without injury. Other circumstances being equal, seminal emissions are injurious in proportion as they are attended with less energetic erections and less vivid sensations, in other words in proportion as they are *passive*. This proportion has a continual application in the study of voluntary and involuntary seminal emissions; because it leads us to this satisfactory conclusion, that the interest of our pleasures agrees with that of our health, as well as that of the human species."—(Vol. i., p. 627.)

It may be asked then, is the loss of semen, or rather the drain of that fluid from the system, which spermatorrhœa is supposed to produce, the cause of so much mischief? I am inclined to think that when the system suffers, and when the constitution becomes shattered, as it often does, that the mischief arises in great part from the exhaustion on the nervous system, rather than from the mere evacuation of so much semen.

Let me mention a few circumstances which induce me to entertain this opinion. Many of the worst constitutional symptoms of spermatorrhœa may be seen in little children whose testicles do not and have not yet secreted semen, but who have learned the early evil habit of tickling their genital organs. Women occasionally labor under constitutional symptoms similar to those of men who have been victims of spermatorrhœa, and yet there is no reason to suppose that semen is secreted in the female. Many of the chronic affections of the uterus give a female that haggard worn look that venereal excesses or nymphomania produce; and I believe that in cases of nymphomania we ought to examine further than the clitoris, and if we did we should often discover irritation at the neck of the uterus or in the organ itself.

In sexual intercourse, the nervous system plays a very important part in the economy, during ejaculation of the spermatic fluid receiving a shock, which repeated at short intervals, even in the strongest persons, will be followed by depression and lassitude in the general system, and all tendency to the same orgasm, or *ébranlement nerveux épileptiforme*, as Lallemand calls it, will cease for a longer or shorter period, unless excited by some extraordinary stimulus; nature thus sinks exhausted for a time; should, however, these repeated calls on the nervous system occur frequently in delicate frames, can the physiologist be surprised that the nervous centres become less and less susceptible to their ordinary stimulus, or that any derangement of the nervous filaments occurs. Hence the power of erection gradually becomes lost, or will only occur under morbid excitement. The more I consider the train of symptoms which patients complain of, or the treatment necessary for the cure, the more I become convinced that too much stress has been laid on mere loss of semen, and too little importance placed on the drain on the nervous system. The other secretions of the body may take place to an enormous amount, without deranging the general health; but their evacuation takes place without the convulsive movements that attend the emission of semen, hence I believe the reason why the system suffers, if emission is often repeated, particularly in persons of a very susceptible nervous temperament. The difficulty of recovery depends likewise upon our inability to renovate the nervous system, and is not alone kept up by the diurnal pollution, as Lallemand believes, the existence of which my experience has thrown great doubt on. Since writing the above, I have read the following passage from Dr. Carpenter's work, which corroborates my experience on this subject.

Dr. Carpenter says: "The high degree of nervous excitement which the act of coition involves, produces a subsequent depression of corresponding amount, and the too frequent repetition of it is productive of consequences very injurious to the general health. This is still more the case with the solitary indulgence which (it is to be feared) is practised by too many youths; for this substituting an unnatural degree of one kind of excitement, for that which is wanting in another, can not but be still more trying to the bodily powers.

"The secretion of the seminal fluid being like other secretions, very much under the control of the nervous system, will be increased by the continual direction of the mind toward objects which awaken the sexual propensity; and thus, if intercourse be very frequent, a much larger quantity will altogether be produced, although the amount emitted at each period will be less. *The formation of the secretion seems of itself to be a much greater tax upon the corporeal power, than might have been supposed à priori;* and it is a well-known fact, that the highest degree of bodily vigor is inconsistent with more than a very moderate indulgence in sexual intercourse; while nothing is more certain to reduce the powers of both body and mind, than excess in this respect. These principles, which are of great importance in the regulation of the health, are but results of the general law which prevails equally in the vegetable and animal kingdoms. That the development of the individual, and the reproduction of the species, stand in an inverse ratio to each other."—*Physiology*, page 683.

Among the numerous other causes of excesses, I must not omit to mention *amour propre*; and although in France the influence of this passion may be stronger than with us, still we can ourselves vouch for the veracity of the following description in certain exceptional cases:—

"Man feels a desire for the esteem of his fellow-creatures, and particularly for that of the female, whose protector he naturally is. It is in her society that he is proud of his physical force, of his intellectual superiority, of his social position, &c.; but above all things, he is anxious to prove to her his possession

of the virile power, and those men who are the worse provided in this respect, are often the very ones who are most fearful of allowing their feebleness to appear.

"This tendency to *vanity* is still further excited by that which predominates in the female under another form: she sees, in fact, that these repeated acts prove most uncontestedly a violent passion; the most satisfactory proof of the power of her charms. She is too proud of it not to respond by every means in her power. These mutual feelings, both the offspring of vanity, excite one another, and then produce reciprocal demonstrations, which are not based on real wants, and which do not proceed from true passion.

"Young married persons who have given themselves up, without regard to consequences, to the impetuosity of their temperament, feel compelled to support the same system as that on which they commenced; they are fearful lest coldness and *l'inconduite* be suspected, and they come to regret their first imprudence, for their at present irritated organs are no longer in that physiological state which has enabled them for a time to support everything.

"If I may judge from the details into which some of my patients have entered, venereal excesses have been produced more frequently at the instigation of misconstrued *amour propre*, than by the *entrainment* of true love. I know all that that exclusive blind passion, which concentrates itself on one object with unbounded devotion, can effect; it however does not prevent those impulsive movements, of which I have spoken, to act on their side, it can only give them increased energy."—(Vol. i., p. 614.)

SYMPOTMS.—Although in practice the symptoms to be hereafter described occur, the most usual course consists in the surgeon being consulted for cases presenting as nearly as possible the following symptoms: Patients will tell you that leading a continent life, night after night they suffer from emissions, but in the majority of cases these occur during a dream, and in a state of erection of the penis. "I ought," says Lallemand, "here to point out an illusion. The general belief exists that erotic dreams produce nocturnal pollutions, and they are looked upon as very dangerous. But lascivious pictures which occur during sleep, arise from excitement of the genital organs, just as erections and spasmodic contraction of the vesiculae seminales do. All these phenomena coincide because they depend upon one and the same cause, but the one does not depend upon the other."—(Vol. ii., p. 334.)

Another class of symptoms, which young men complain of, will be found in the following case:—

A gentleman of delicate frame, twenty-five years of age, who has been under my care on former occasions for gonorrhœa, states that for the last three months, on going each time to the water-closet, he has observed, particularly when obliged to strain, a mass of gelatinous fluid pass from the urethra and remain suspended in the water; that, without having seen this appearance and heard of seminal emissions, he should have been unaware of the occurrence, as the emission was unaccompanied with any pleasurable sensation, but thinking that some notice should be taken of it, he came to ask my opinion. His general health seems good, but he acknowledges to have become very nervous lately, and is not so equal to his ordinary avocations as formerly. After having been very continent for some months, he had lately indulged in venereal excesses. I told him my suspicions, and desired him to take a portion of glass with him, and on the following morning to place it under the penis when straining, and, covering it with another portion of glass, envelop the two in a piece of gutta-percha paper, and bring the fluid, if any passed, to me. This he did, and I submitted it to Dr. Griffith, who found plenty of spermatic animalcules; thus leaving no doubt that the emitted fluid was semen. Such cases are not unfrequently met with. In other instances, patients tell you that if they converse

with, or toy (an Hunterian expression) with women, or if they ride on horse-back, or walk fast, semen will come away ; that the friction of the trousers will be sufficient to produce emission, and that ejaculation is attended with scarcely any spasm.

Before proceeding further, I can not, I think, do otherwise than consider, as a symptom of spermatorrhœa, the—

Character of the Urine containing Semen.—The aspect of urine containing seminal fluid is sometimes very characteristic at first sight.

"In recent cases we notice little granules rolling about at the bottom of the glass ; these are of a variable size, semi-transparent, irregularly spherical, very similar to grains of tapioca (semoule). It is impossible to mistake the bodies for any of the urinary salts, because they appear before the urine is cold, and they are soft, and never adhere to the sides of the glass ; on the other hand, neither the urethra, prostate, bladder, nor kidneys, furnish similar bodies, more especially when the urine is transparent. These granulations come from the vesiculae seminales, as I shall presently show : they may be regarded as the certain signs of diurnal pollutions."—(Vol. ii., p. 354.)

In cases of spermatorrhœa which have lasted some time, these granular bodies disappear from the bottom of the glass, and are seen in transparent urine as a thick, flocculent, homogeneous white cloud, in the form of multitudes of *brilliant points*, quite characteristic. They are found neither in vesical mucus nor in prostatic fluid, which are the only ones that could be mistaken for diurnal pollutions. Their presence betoken spermatric discharges, as Lallemand says he has often verified by the microscope. Spermatozoa will not, however, be found mixed with them ; they must be looked for in the lower strata of the liquid. Lallemand says he found these *brilliant bodies* in the testicle and vesiculae seminales of a man who died of retention of urine ; they were eight times smaller than globules of mucus, all perfectly spherical, and similar to one another in size—equal to the heads of spermatozoa ; yet in this case nowhere could he find traces of spermatozoa.—(Vol. ii., pp. 202, 356.)

These appearances will be most evident in the morning, particularly when the night has been restless, or in the daytime, when nervous excitement has come on, or the digestion is impaired. To notice these changes, it is best to employ a little stand similar to that containing test-tubes, only the glasses should be much larger, so that the patient may be able to make water directly into them ; and then in each little stand they can be separately examined when the urine is cold.

In diurnal pollutions, Lallemand has found, "when the evacuations occur rarely, that the semen preserves its distinctive characters—he observed nothing remarkable, in either the number or dimensions of the animalcules ; but when the complaint has assumed a form so severe as to influence the rest of the economy, the semen is found more liquid, and the animalcules less developed and active. Up to this point their number has not been found sensibly diminished ; in some individuals they appeared increased even in quantity. When erections cease, the semen is more watery ; the size of the animalcules is reduced one fourth, or they become a third less in size than usual. Later they become very rare ; and in two cases they had altogether disappeared, although the semen had preserved its characteristic smell."—(Vol. ii., p. 409.)

Lallemand says : "It is a well-recognised fact, that the intensity of pleasure is increased in proportion to the degree of elaboration which the semen undergoes before the accomplishment of the act. The same individual, in the same moral condition, with the same female, will experience very different sensations accordingly as the semen has been secreted slowly, retained a long time in the vesiculae, or been there but a short period."—(Vol. i., p. 622.)

The same author states he examined the testes of thirty-three persons who

died of various diseases, and in only two did he find spermatozoa in the testes : one died suddenly from a fall, the other perished from gastro-enteritis. In the thirty-one other persons who died of chronic complaints, these bodies were not found in the testes, but they were present in the vesiculae seminales. The animalcules were less in number, and more transparent, in proportion as the disease had lasted a long time."—(Vol. ii., p. 397.)

Lallemand describes the symptoms of spermatorrhœa in the following words : " Let us suppose that the organs are sound, but exposed to the acts more frequently than the *real wants* of the individual require. These excesses will be the better supported in proportion as they are the first, or as they have not been preceded by any inflammation or irritation of the sexual organs, and as the tissues are in a complete state of integrity. It is thus, in like manner, that we must comprehend the reputation of novices, for *absolute* inaction does not fortify the generative system any more than does the contrary ; they are only the more susceptible in proportion as they have been more frequently affected.

" Provided these excesses are carried further, or that they last long, the excitement augments, and the first symptoms of irritation manifest themselves. Heat in the canal commences, particularly during the act of making water, the urine is more abundant than usual, and the desire to pass it more frequent, accompanied with a tickling which is sometimes agreeable ; the meatus is more injected than usual, and the intensity of pleasure is diminished.

" At a later period dysuria comes on, occasionally attended with haematuria ; ejaculation takes place with a rapidity that goes on increasing ; the semen sometimes contains streaks of blood, at other times it is altogether bloody. The irritation extends to the prostate, or the margin of the anus, and a feeling of weight is felt in the perineum and rectum, accompanied with a spasmotic constriction of the sphincters, which produces constipation. The spermatic chords and the testicles become painful, and sensitive to the least pressure : they require the support of a suspensory bandage.

" Venereal excesses alone do not provoke these symptoms of irritation : they often produce chronic and even acute inflammation. I have cited two cases in which cicatrices between the veru-montanum and the neck of the bladder took place. We are well aware that urethritis, produced by this cause, is not unfrequent. Their development is sometimes favored by accidental circumstances, as I have said ; but at other times we can only attribute them to the exaggerated répétition of the act."—(Vol. i., p. 667.)

In addition, we find the general health suffering, the disposition to intellectual employment almost lost or impaired.* Exercise becomes a toil, society is spurned, and the company of females particularly avoided. This arises, I believe, from the patient thinking that he is impotent, or from having found the inability of erections taking place when connection has been attempted ; but this we shall again allude to under the head of impotence.

Before quitting this subject, I must, however, quote the great experience of Lallemand, who says, that one of the earliest symptoms of spermatorrhœa consists in a diminution of pleasure during the act, even before the general health has become deranged. He continues : " At the same time that the sensation becomes weakened, erections† are less complete and prolonged ; ejaculation

* " It may appear extraordinary that Rousseau should have produced his *chefs d'œuvres* during the time he was laboring under the severe forms of spermatorrhœa. But I have already frequently remarked, that these diseases offer infinite shades in their intensity, and have seen in many cases that those we call chronic and constitutional are the most obstinate, but the least severe ; that they follow a course essentially intermittent : that an active, wandering life may suspend the injurious effects during many years, whereas a sedentary occupation, or intellectual labor, constantly exasperates them." (Vol. ii., p. 289.)

† I probably shall find no better occasion than this to call the attention of my readers to the influence which lesions of the brain, or spinal chord, may have on erections and ejaculation. Lallemand relates

is more rapid—it becomes, in fact, so precipitate that intromission can not take place. The act, in regard to its duration, is almost reduced to nothing; and the same may be said of the other phenomena: it consists of a simple *excretion of semen*. We should, moreover, add, that the seminal liquor is little abundant, watery, transparent, without smell, and incapable of fecundation."—(Vol. i., p. 623.)

One of the worst features is when, in the words of Lallemand, "little by little the phenomena of excitement, which precede the crisis, diminish, finally to completely disappear. The emission then occurs without dreams, without erection, without pleasure, and even without any particular sensation; in fact, the patients are not aware that emission has taken place, except by the stains which they observe on the linen when they awake. At the same time, the seminal fluid loses by degrees its consistence, its color, its smell, and even the spermatozoa resemble most closely mucus, or prostatic fluid."—(Vol. ii., p. 329.)

The patient becomes hypochondriacal, and too often diseases of the brain, heart, or lungs, are suspected, and active treatment to combat these affections is tried, only to aggravate the symptoms of the complaint.

Occasionally the patient will himself increase the severity of the affection, by having recourse to all sorts of devices to further stimulate his flagging virile powers. Some resort to a variety of drugs, such as cantharides, opium, tobacco, and spirits, which will give an occasional fillip to the system; others try to renovate their powers by having intercourse with very young girls, and I have reason to think that many an unnatural connection has had its origin in this attempt to excite abnormal sensations, on the same principle as in the case related by Chopart, of a shepherd-boy who was in the habit of passing a piece of twig down the urethra, in order to produce ejaculation, when all other means of exciting emission had failed. In such instances as these, the most exaggerated symptoms will occur, as may be readily surmised, and even death may follow. These cases are, however, so rare, that they scarcely require more than a passing notice.

PROGNOSIS.—Lallemand observes: "In respect to the *evil habit in children*,

a case in which a patient could produce ejaculation by striking his head with his knuckles. Dupuytren has long since shown that lesions of the spinal chord produce priapism, and I have witnessed several such cases, but ejaculation has not occurred; and it is a curious fact, that this state of priapism co-exists with loss of motion and sensation in the lower extremities, and as the power in the limbs is regained, the priapism ceases. It is, however, an anomaly, and Lallemand thinks it shows that priapism is not under the influence of the spinal chord, for, as he justly observes, injuries to the spinal chord generally produce diminution, if not annihilation, of the virile power and of the generative functions.

Lallemand mentions a curious case (vol. ii., page 65) in a soldier who came under his care, having fallen on his sacrum: there was loss of power in the lower extremities, and loss of sensation in the glans, prepuce, skin of penis, and scrotum. Catheterism produced no pain, but there was catarrh of the bladder. The penis was frequently in a complete state of erection, but ejaculation never was induced, although the patient had attempted, by masturbation, to rid himself of the erection. He afterward went to visit his mistress, and although sexual intercourse was indulged in for several hours, until she was completely overcome, ejaculation did not occur; nocturnal emissions, notwithstanding, occasionally took place. This, he thinks, proves the special influence of the spinal and ganglionic nerves in inducing ejaculation and voluntary emission, as the cerebro-spinal influence was completely annihilated; and this state, he thinks, is somewhat analogous to the condition of a man when under the influence of wine or opium.

Messrs. Kirkes and Paget, in their recent work on Physiology, make the following observations on this subject:—

"The fact that, after division or disorganization of a part of the chord, movements, and even forcible, though purposeless ones are produced in the lower limbs when the skin is irritated, proves that the spinal chord can supply nervous force for the action of the muscles that are naturally most under the control of the will; and it is therefore not improbable that, for even the voluntary action of those muscles, when the chord is perfect, *it may supply the force, and the will the direction*.

"The emission of semen is equally a reflex act, governed by the spinal chord. The irritation of the glans penis conducted to the spinal chord, and thence reflected, excites the successive and co-ordinate contractions of the muscular fibres of the vasa deferentia and vesiculae seminales, and of the bulbocavernosi, and other muscles of the urethra; and a forcible expulsion of semen takes place, over which the mind has little or no control, and which, in cases of paraplegia, may be unfelt."—*Physiology*, p. 391.

it is easy to re-establish the health, if we can prevent the little patient masturbating himself, for at this period the resources of nature are great." He does not, however, think that "it is so easy to repair the injury inflicted on nutrition during the development of the body; nevertheless, the consequences disappear readily, and all the functions become re-established—not so, however, when masturbation occurs after puberty."—(Vol. i., p. 468.)

In the Adult.—"Emissions may be said to depend upon the fullness of the vesiculae seminales, as long as they are preceded by seductive, varied, prolonged, erotic dreams, which leave behind them as vivid impressions as the reality itself, particularly if they are accompanied with violent erections and enthusiastic sensations. Everything then announces an exuberance of energy in the genital organs, which reacts on the other portions of the economy, increases the value of existence, and displays life through a prism of illusions." (Vol. ii., p. 327.)

Under these circumstances, the patient is on the brink of a precipice; and if precautions are not taken, and regular exercise enjoined, or intellectual employments indulged in, these emissions will become the source of a great deal of subsequent mischief, similar to what has been described under the head of symptoms.

Nocturnal Pollutions.—Lallemand says: "The most profuse nocturnal pollutions are far from being hurtful. When they are due to a true spermatic plethora, they cause a cessation of that continual erotic occupation, that state of orgasm, accompanied by agitation, disquiet, malaise, and undefinable disturbance is noticed in all the functions. They are then followed by a general feeling of happiness; the head becomes lighter, the ideas more clear, the movements more free; there is a greater disposition to gayety, and to every sort of work."—(Vol. ii., p. 234.)

"*Diurnal pollutions* are (other things being equal) much more difficult to cure than nocturnal emissions; and even seminal emissions which attend the simple passage of the urine, are more serious, and more obstinate than those which take place during the effort of straining in defecation. In a word, experience proves that the severity of spermatorrhœa is proportioned to the ease with which it takes place, and common sense suffices to foresee such a result."—(Vol. i., page 627.)

When the genital organs are healthy, and the constitution good, seminal emissions will be only voluntary, and if the digestive powers are good we may promise a speedy reparation. But if irritation has already seized upon the spermatic organs, and an abundant quantity of semen escapes daily, or several times a day, without the patient's knowledge; the digestion will become deranged, erections will diminish, as well as the voluptuous sensations, because the semen is less perfectly formed; under these circumstances, the dangerous incentives will become feebler by degrees, and the patient will probably easily give up habits, which only inspire him with disgust."—*Lallemand*, vol. i., page 472.

DIAGNOSIS.—The symptoms above alluded to, will enable a practitioner to distinguish spermatorrhœa from other affections, particularly by attending to the directions given at page 149. There exist, however, cases in which a minute diagnosis between ill-conditioned semen and the mucus proceeding from the bladder is almost impossible. These instances, however, are of the less importance, inasmuch as the treatment proper for the one complaint, usually is equally applicable to the other, and it becomes only necessary to study the complications; these will often in each particular case enable us to arrive at a sufficiently accurate diagnosis for all practical purposes.

Lallemand remarks, that the "distinction between semen passed during defecation and prostatic fluid, and that coming from the vesiculae seminales, may

be assisted by causing the patient to make water before going to stool; in such cases the urethra will not furnish more than a drop or two of a stringy viscous fluid, almost always transparent, susceptible of being drawn out between the fingers; and the slightest consideration will show, how impossible it is that these fluids should be expelled in any large quantity, inasmuch as there is no reservoir in which they can accumulate. The secretion comes probably from the vesiculae seminales, when not very abundant, and when it has been emitted suddenly, spermatic fluid will froth like soap when rubbed between the fingers; and its odor is characteristic."—(Vol. ii., page 347.)

It is, however, by the microscope alone that we can arrive at a correct diagnosis on this matter.

"It should be recollectcd that semen is never ejaculated except during the last contractions of the bladder, whereas it often passes with the water. In blennorrhagia, the discharge comes with the first stream of urine, and is thick; this depends upon the presence of pus, mucus, or the debris of epithelium, which has accumulated in the urethra. In cases where blood, pus, mucus, and those materials which are heavier than urine, collect toward the neck of the bladder, they pass out first, particularly when the patient stands up; the contrary happens when semen is expelled."—(Vol. ii., page 350.)

Instead of examining the urine, a small quantity of fluid may be pressed out of the urethra, and exposed to the microscope, to ascertain if, in suspected cases, diurnal pollutions exist; in advanced cases, spermatozoa may not be found; still, generally speaking, they will be present.

PATHOLOGY.—In the advanced stages of spermatorrhœa, when irritation or inflammation has been set up in the genito-urinary system, or nocturnal or diurnal pollutions have been established, and pain, dysuria, or a frequent desire of passing urine occurs, the surgeon will notice when he introduces a plated steel bougie, about the size of No. 8, that for the first three or four inches the instrument passes readily enough, then the patients begin to complain of pain, and as it advances toward the bladder, they accuse you of cutting them with a knife, so acute is their suffering. When the bougie reaches the bladder, and is allowed to remain at rest for a few minutes, their suffering ceases, and on withdrawing it, the pain is slight, and no blood follows, or in some cases, a drop or two only oozes out. In these cases, then, we may naturally suppose (for I have never had an opportunity of verifying, on the dead subject, my opinion) that we have either simply a morbid sensibility of the mucus membrane, about the veru-montanum, or that granular condition, which comes on frequently in mucous membranes, as a consequence of chronic inflammation, and which is delineated in the vagina and uterus in plate i., fig. 2, and must be familiar to all on the conjunctiva of the eye, as granular conjunctivitis, or that state of irritation and inflammation spoken of at page 188.

Great credit is due to Mr. Lallemand for his investigations on the pathology of spermatorrhœa, and it is to him the profession is particularly indebted for having called their attention to the morbid changes which the vesiculae seminales and spermatic ducts may undergo; for it is alone by studying these lesions that we can hope to arrive at the proper treatment, which must vary accordingly as one or other structure is affected.

Of the Vesiculae Seminales.—The vesiculae seminales, says the professor of Montpellier, may be dilated, and thickened; they may lose that irregular unequal surface so characteristic of these bodies, and become firmly adherent to the surrounding structures. The lining membrane may be covered with lymph, or granular fungoid vegetations. These sacs may be filled with pus, or tuberculous matter, and in color the viscous fluid they contain may resemble meconium.

"I have almost always found in the vesiculae seminales, particularly at the

bottom of the depressions, a thick granular, shining liquid, variable in its aspect, color, and consistence, but resembling, a good deal, pretty thick glue, which is more or less transparent: under a power strong enough to observe the spermatozoa, the particles* (grumeaux) of this matter appear enormous, irregular, more or less opaque, and of a constant shape. These are evidently the products of the internal membrane of the vesiculae seminales; for they are found with analogous characters in the accessory vesiculae of the rat, &c., which never contain animalcules, and do not directly communicate with the vas deferens. These last never contain similar bodies in any species. This secretion, then, is analogous to that produced by the prostatic follicles, and Cowper's glands, &c. Its use is the same, and deserves for many reasons our special attention."—*Lallemand*, vol. ii., page 398.

In speaking of the morbid appearances of the spermatic chords, the same authority states: "One or both of the spermatic chords may be affected. Instead of being circular, and forming little nipple-like projections, their orifices may present a stretched chink, large enough to admit a goose-quill, and there may be erosion of a sort of sphincter which surrounds them. Ulceration may attack the mucous membrane. The lining membrane may present a villous alveolar inflamed appearance, or it may become of a yellow color. Instead of being the elastic free bodies they are, they may become cartilaginous or ossified, and they may have a tortuous crooked direction."—*Lallemand*, vol. i., pp. 11, 23.

TREATMENT.—It is of more importance for the surgeon to consider the immediate causes which actually produce the spermatorrhœa, than to discover the primary cause of the occurrence, in order to cure the affection. For this purpose he should determine the actual condition of the urethra, whether the vesiculae seminales be laboring under any of the forms of irritation or inflammation spoken of in preceding pages. He must next ascertain if these changes may not be kept up by any of the numerous causes which we have seen produce them. To effect a cure with any chance of success, these preliminary questions must be settled. Should masturbation still be indulged in, or should the patient be still under the influence of venereal excesses, no local remedies will relieve the complaint, unless we can induce or compel a total change in the habits of the patient. The study of the previous pages will at once put the surgeon in possession of the best means of effecting this. In young children prevention is better than cure; parents, schoolmasters, and those having the care of youth, can not be too much on their guard; on the occurrence of the first symptoms, described at page 166, *Lallemand* remarks: "When a child, who has once shown signs of a good memory and of considerable intelligence, is found to evince a greater difficulty to retain or comprehend what he is taught, we may be sure that it does not depend upon indisposition, as he states, or idleness, as is generally supposed. Moreover, the progressive derangement in his health, the falling off in his activity, and in his application, depend upon the same cause, only the intellectual functions become in the most marked manner enfeebled."

"It must be clearly understood, that it is not here of idle or obtuse children, who have not been able to compete with others in intelligence, that we are speaking."—(Vol. iii., page 165.)

Steps should be at once taken to prevent masturbation, or the habit will become inveterate, and rapidly spread from one boy to the other. Personal chastisement will not often avail; in the case of Rousseau, we know that flogging was the primary cause which excited emissions that finally became the bane of his life. In infants we must attempt to correct the habit by the ordinary mode of muffling the hands, or applying a sort of strait-waistcoat; in preventing a child polluting himself the most careful watching will often fail in correcting the

* They have been compared to grains of sago, see fig. e in woodcut, page 155.

habit when once it has been engrafted, or when emissions have produced those changes in the urethra and its appendages, which we have seen keep up the complaint and react on the brain; or which having at first excited the boy's imagination, react again through the brain on the genito-urinary system.

In the boy it is of the utmost vital importance that the mind be directed into a different channel, and that every means be taken to check the secretion of semen. Experience has proved that to effect this, there is nothing so good as gymnastic exercises regularly employed, and carried to an extent just short of fatigue. A taste should be encouraged for cricket, rowing, walking, swimming, and the usual feats of strength which are taught in a gymnasium; under such training the secretion of semen will diminish;* but still emissions will take place occasionally, until they entirely disappear; if irritation or inflammation of the vesiculae seminales exist, the appropriate remedies, to be hereafter spoken of, must be combined with gymnastic exercises. If we have reason to suspect any of the other local causes of irritation, such as stricture, haemorrhoids, or fissure of the anus, these complaints must at once be attended to (an account of the proper treatment of which would be out of place here), without which we can not hope to cure the patient; and I need not say that those interested in a youth should in the mildest, but still in a firm way, point out the consequences to which such habits lead, and he should be taught to look upon masturbation as a cowardly, selfish, debasing habit, one which precludes those who indulge in it from associating with boys of proper spirit, distinguished as they are by a love for manly amusements compatible with health. Establish this feeling, at the same time that the surgeon remedies the mischief that has been done by previous excesses, and the system soon rallies, and a watch need now only be kept on the general health of the little patients. It is from the fault of parents, and those who direct the studies of youth, not attending to the commencement of this evil habit, that many a man's future career, commenced under the most favorable auspices, has been thwarted, and his physical powers and growth checked, this, by a little seasonable advice and judgment on the part of those who are guardians of youth, could have been avoided or remedied.

In the words of Lallemand, "How much glory has been lost, how many a noble career has been blighted, how many an unexpected suicide, and how many a fit of despair, would cease to be an impenetrable mystery to families and medical men, did we know better than we do the influence of excessive fatigue of the brain on the production of involuntary seminal emissions, and that still more powerful action of these enervating evacuations reacting on the cerebral functions. Who knows to how many great men such studies as these would be applicable, did we possess confessions as frank, intimate, or complete as those of Rousseau?"—(Vol. ii., p. 290.)

In strong, robust young men the surgeon would do well not to treat as disease emissions coming on once or twice a week, but recommend the patient to avoid suppers, abstaining from tea, coffee, and tobacco, to lie on hair or spring mattresses, instead of feather-beds, and use a shower-bath every morning, take regular exercise, short of fatigue, as boating,† riding, boxing or walking. To

* Lallemand says: "The urgent necessity of recruiting each day the great waste occasioned by varied and progressive gymnastic exercise, diminishes in an equal proportion the secretion of the semen; for the economy only occupies itself with the reproduction of the species when it has provided for the conservation of the individual, as I stated when speaking of the influence of nutrition on generation."—(Vol. iii., page 466.)

† The effect of exercise in diverting the activity of the genital organs into other channels was well known to the ancients, who established everywhere gymnasiums; they had not failed to mark the continence of the athletæ. It is likewise a well-known fact that those who are obliged to undergo great physical exertion are remarkable for their abstinence from sexual indulgence. The moderns who are training for matches are well aware that indulgence in sexual intercourse wholly unfits them for great feats of strength; and the captain of a boat on the river strictly forbids his crew any indulgence of the sort just previous to a match. Some have gone so far as to assure me that they can discover by a man's style of pulling whether, against their wish, excesses have been committed on the

insure regularity, it is well to recommend the patient to put himself under one of the regular trainers, who are very particular about hours, diet, and drink. One of these advises an hour's exercise with the skipping-rope every day to those who complain of growing too fat, and in wet weather this novel form of exercise might I think be employed with equal advantage by those liable to suffer from seminal emissions. Before doing this, however, let the surgeon examine if his patient does not suffer from varicocele, if he does, a suspensory bandage must be worn, or, what is still better, a varicocele-ring, which the patient should be taught how to put on; the ring may be attached by a little piece of thread to some portion of the patient's dress, otherwise it may readily slip off and be lost, and the patient while taking his exercise be left without support.

The patient, when spoken to kindly on his excesses, will frequently ask what we professional men mean by excesses. Our reply should be, that he individually commits an excess every time coitus is succeeded by languor, depression of spirits, and malaise, as a general rule. This is the only one applicable, for such results will not happen if the male is in good health, and indulges moderately his sexual desires. It would be as well to point out to him that if the virile power is in an inverse ratio to the desire for sexual intercourse, great danger is incurred in continuing to attempt coitus, for such cases finally terminate in seminal emissions taking place without erections, the worst form of the disease we are aware of, as this debilitates the system most seriously.

At a later stage, when the disease has recurred so often as to impair the general health, or where the patient is naturally delicate,* nutritious food, tonics, and sea-air, cure the complaint. In the more severe forms, by giving opiate enemata in the proportion of sixty or eighty drops of liq., opii., sedativ., to an ounce and a half of fluid before going to bed, and the regimen recommended above, a cure may generally be effected. In addition to this medical treatment, the patient should be advised to seek cheerful society, but at first to shun association with females; and above all things to break off acquaintance with prostitutes. His reading should consist of the light literature of the day, and strict injunctions should be given to abstain from the perusal of any book containing allusion to the subject of his complaint, or any work which would be likely to produce erotic ideas. I lately had a patient under my care who had brought himself to the last state of hypochondriacism, in consequence of reading those trashy quack books so freely advertised in the daily papers.

The following observations of Dr. Carpenter are fully borne out by my own observations:—

"The sexual secretions themselves are strongly influenced by the condition of the mind. When it is frequently and strongly directed toward objects of passion, these secretions are increased in amount to a degree which may cause them to be a very injurious drain on the powers of the system. On the other hand, the active employment of the mental powers on other subjects, has a tendency to render less active, or even to check altogether, the processes by which they are elaborated. This is a simple physiological fact, but of high moral application. The author would say to those of his younger readers who urge the wants of nature as an excuse for the illicit gratification of the sexual passion, Try the effects of close mental application to some of those ennobling pursuits, to which your profession introduces you, in combination with vigorous bodily exercise, before you assert that the appetite is unrestrainable, and act

previous night by any of those who form the river crews, and they have not scrupled to attribute losing a match to venereal excesses.

* The use of yolk of egg given to such invalids has been strongly recommended to me by my friend, Dr. J. W. Griffith, in the belief that the phosphorus in the yolks from the peculiar form of combination in which it exists in them, would tend to supply that great demand on the system which the loss of phosphates must occasion. I have no experience on the question, but the idea is so feasible that I mention it as of probably great practical value.

upon that assertion. Nothing tends so much to increase the desire, as the continued direction of the mind toward the objects of its gratification. The following observations, which the author believes to be strictly correct, are extracted from a valuable little work (anonymously) entitled, 'Be not Deceived,' addressed to young men. They are directed to those who maintain that the married state being natural to man, illicit intercourse is necessary for those who are prevented by circumstances from otherwise gratifying the sexual passion. 'When the appetite is naturally indulged, that is, in marriage, the necessary energy is supplied by the nervous stimulus of its natural accompaniment of love before referred to, which prevents the injury which would otherwise arise from the increased expenditure of animal power; and in like manner also, the function being in itself grateful, this personal attachment performs the further necessary office of preventing immoderate indulgence, by dividing the attention through the other sources of sympathy and enjoyment which it simultaneously opens to the mind. But when the appetite is irregularly indulged, that is in fornication, for want of the healthful vigor of true love, its energies become exhausted, and from the want of the numerous other sympathetic sources of enjoyment in true love, in similar thoughts, common pursuits, and above all, in common holy hopes, the mere gross animal gratification of lust is resorted to with unnatural frequency, and thus its powers become still further exhausted, and therefore still more unsatisfactory; while, at the same time, a habit is thus created, and these jointly cause an increased craving; and the still greater deficiency, in the satisfaction experienced in its indulgence, further, continually, ever in a circle increases—the habit demands indulgence, consequent exhaustion, diminished satisfaction, and again demand, —till the mind and body alike become disorganized.'—*Carpenter, Human Physiology*, p. 359.

Marriage is a remedy for masturbation and spermatorrhœa, which has often been suggested and carried into effect without always giving that relief which has been anticipated; a few observations on the subject may therefore be here made with great advantage, as the surgeon's opinion on its being advisable is often asked.

In the slighter cases no doubt can exist that marriage may completely cure the patient before the habit has produced those ill consequences which have been alluded to, for "the regular exercise of organs," to use the words of Lallemant, "will alone give all the energy of which they are susceptible, and those of generation are far from forming an exception to this general law. To complete the cure, it is necessary that sexual relations should become established."

"But when ought we to permit them—when recommend them? When continence has become so painful as to bring about real fatigue of the organs of generation, or when we remark no further development of the energy. It is to be feared that their power will decrease and fall into a state of feebleness caused by inaction too long prolonged. Moreover, it will be necessary to take into consideration a thousand circumstances, the importance of which the practitioner will alone be able to appreciate."—(Vol. iii., p. 470.)

In the confirmed cases, where irritation or inflammation is set up in the vesiculae seminales, or when diurnal or nocturnal emissions take place involuntarily, marriage, far from improving the condition of the patient, will only aggravate the complaint in the man who is injudicious enough to be persuaded to commit matrimony. In such cases the bridegroom will probably observe all the previous symptoms become exaggerated, and erection, even under excitement, will probably not take place; if erection occurs, ejaculation will precede the intromission of the virile organ, or in many cases ejaculation will not follow at all, although erection may occur.

Let the parents or advisers consider the position of such an impotent bridegroom ; let them picture to themselves his disappointment, chagrin, and shame ; and it is under such circumstances that more than one so mated has committed suicide. But as the professor of Montpelier has justly observed : " What has the young girl, who is thus sacrificed to this egotistical calculation, done that she should be condemned to the existence that awaits her ? Who has the right to regard her as a therapeutic agent, and to stake thus lightly her future prospects, her repose, and the happiness of the remainder of her life ?

" Until a man has contracted these indissoluble bonds, impotence the most complete does not compromise the fortune of any one.

" It is precisely because marriage is the most sacred bond for individuals, as well as the most important for society—it is because an iron law renders it indissoluble—that it is rational as well as moral not to contract it without having the certainty that it is proper."—(Vol. iii., p. 470.)

In practice, however, we find that the plans of parents, or the advice of the surgeon, is often frustrated by other considerations. In many cases the patient is too young to marry ; in other instances, such is the dislike to marriage, that every woman is distasteful to those suffering from spermatorrhea, as if nature really intended to spare the victim those mental sufferings which we have seen attend these ill-assorted matches.

" Marriage," says Lallemand, " is certainly the most moral conclusion that can be desired ; but who would dare counsel it at once without knowing if the cure is complete—if the happiness of the future home will not be compromised ? A probationary state is necessary to substantiate the convalescence which alone can prove a cure to have taken place."—(Vol. ii., p. 263.)

Cantharides have been employed against impotence. " They form the basis of the pastilles of Serail, as well as the numerous pills, pastes, and opiates, which constitute in the East the principal commerce of all those who sell drugs. They constitute essentially the *diavolini* and other aphrodisiac preparations still too much employed particularly in Italy.

" The effect produced by cantharides on a healthy man has induced persons to believe that it would restore virility lost from excesses. Thus charlatans, and even many practitioners, have at all times prescribed cantharides as a traditional resource. Nevertheless I have never yet met with a single impotent person who has not regretted having made use of the beetle. The greater proportion have not even experienced the momentary benefit which they expected ; and in many cases the erectile tissues have become smaller than in the habitual state of repose. Some few have experienced erections more or less energetic which have lasted a longer or shorter period ; but the loss of semen has been exasperated instantaneously or very shortly afterward."—*Lallemand*, vol. iii., page 333.

Galvanism, M. Lallemand thinks far preferable as a more powerful remedy, and one that can not be abused in the same way that cantharides are.

It is by such means, coupled with exercise, that a cure will be effected.

In the serious cases, and when the above means do not succeed, I at once suspect a change of structure in some portion of the urethra, and suggest the *passage of an instrument*, when I usually find the patient experience the sensations described at page 81, under the head of Pathology.

These patients get well under the repeated passage of instruments, which allays the morbid sensibility, particularly when combined with astringent injections, thrown up with the precaution noticed at page 72.

When emissions take place without erections, and when the semen flows away without the consciousness of the patient, it is of no use to employ the general treatment above noticed. I am in the habit of at once passing an instrument, and ascertaining the condition of the canal. In many instances sim-

ilar sensations will be experienced to those mentioned in the last paragraph; in others a large patulous flabby passage will be found, and the secretion following the withdrawal of the instrument will be often of a glairy, stringy character. The plan I now pursue in these cases is to employ strong injections of nitrate of silver (x. grs. to 3*j.*) by means of a syringe similar to that delineated in the adjoining woodcut, and which may be procured at Mr. Ferguson's, in Giltspur street, London.

The piston and tubes are made of glass, attached to a silver catheter, which is passed down to the prostate and membranous portion. By this means the fluid comes in contact with those parts, and enters the follicles, which are so frequently the seat of the disease. In many cases I have found this instrument answer better than any other, as the liquid comes in contact with every part of the canal, and does not leave those depressions untouched, which the solid caustic, used in Lallemand's instrument, often does. The usual means of employing injections will not bring the caustic in contact with those portions of the urethra that we desire to cauterize, and this plan will be found far superior to any other when we wish to cauterize the deeper portion of the urethra.

The ordinary consequences of strong injections follow, such as have been already described at page 64, and require no further notice here; and the general treatment should be similar, namely, rest in the horizontal position; and it is better to confine a patient to bed or the sofa, and administer cubeb or copaiba.

I follow up this caustic injection with an astringent one, as soon as the discharge has abated. I use a second caustic injection if the discharge returns, with the precaution alluded to above, and success crowns, very often, my endeavors, and recovery follows, care being taken, of course, to have previously relieved the bowels and keep them open. When I am unable to effect a cure by caustic injections, I do not hesitate to employ Lallemand's instrument, and that it is a useful one no one can doubt, as it enables us to carry the caustic down to the diseased structures, and cauterize one portion more than another; but its value has been much overrated. Employed with the greatest care, the caustic can not enter all the fructuositates and openings of the lucunæ with which the posterior part of the urethra abounds; it only touches the surface of the granulations, their interstices are intact; not so with a solution of the caustic, and hence the efficacy of injections when they can be brought to bear on an affected part.

I may here mention that it is quite astonishing what rough handling with instruments and caustic injections this relaxed and diseased mucous membrane will bear; reaction seems to disappear, and it is very fortunate, otherwise the bunglers who meddle with this department of surgery might have caused many deaths.

As some of my readers may wish to learn every particular relative to the employment of M. Lallemand's instrument (see woodcut No. 1, page 104), I

Instrument for injecting
Nitrate of Silver.



shall translate those passages in which he treats of its employment, as well as the account of advantages which the professor of Montpelier states he has derived from its use in a large number of cases.

A catheter should be passed in order to empty the bladder, and judge of the length of the urethra. This he recommends, should be done by stretching the urethra, and as the catheter is withdrawn, watching the moment when the water ceases to pass; this will give the length of the canal, particularly if the finger be placed on the instrument at the point just beyond the glans penis. This may be measured on the instrument, which goes under his name, and should be marked by the slide seen in the woodcut.

In my own practice I have not found it necessary to pass a catheter, as I usually desire a patient to drink little on the day I propose applying the instrument, and request him to relieve the bladder immediately before introducing the porte caustique. It is unnecessary likewise to relieve the bowels by castor-oil, given in the morning, or by means of an enema. The instrument must be prepared in the following manner: Some nitrate of silver must be pounded, and then put into the hollowed part (seen in the woodcut) and fused by means of a spirit-lamp, the surface should then be scraped, so as to render it even; the canula must then be returned into the closed instrument which, after being oiled, may be passed down into the bladder, the patient being in bed or lying on a sofa: a surgeon at all in the habit of passing instruments is able to distinguish when the instrument enters that viscus. The diseased part is at once known to the patient by the instrument causing some pain. This once ascertained, the surgeon, will withdraw the outer canula to the extent of half an inch, and at the same time give a rotary motion to the canula containing the caustic. By this means the diseased surface is slightly cauterized, eschars are not necessarily formed, nor are any passed in the urine, and the internal canula, being drawn within the external one, cauterization is confined to the morbid structures only. Rest in the horizontal position must be enjoined, and the patient desired not to make water for some hours. If pain comes on, a good dose of laudanum may be prescribed, or an enema with opium recommended. For the few following days there is some pain in making water. The discharge increases, and is mixed with a little blood; but with attention to diet and rest, together with moderate doses of copaiba or cubeb capsules, these symptoms abate, and with them the emissions, although in some cases the cauterization may increase them for the first few days. Sexual intercourse must be strictly prohibited; and any cause which may originally have produced spermatorrhœa, must be studiously avoided. In some cases it may be necessary to recur to a second or third application of the caustic; but at least ten days should elapse between each cauterization, and any accidents which may arise must be treated on general principles. A third cauterization is never necessary; and if no cure results other treatment must be tried.

The professor of Montpelier does not assert that this plan of cauterization will be always successful. "It has succeeded," says he, "in cases where atony and debility were the prominent symptoms; less rarely when accompanied with nervous symptoms, and a strong hereditary tendency."—(Vol. iii., p. 392.) Again he says: "Two thirds of the cases of spermatorrhœa would be beyond the resources of our art, were it not for the assistance we derive from this powerful modification."—(Vol. iii., p. 406.)

In twenty years, during which he was daily in the habit of using the instrument, he asserts, page 401, that he never saw any ill consequence arise from the treatment, and I can fully bear out this statement, as far as my own experience is concerned.

SECTION XIV.

IMPOTENCE.

DEFINITION.—Impotence has been defined to be a casual or permanent inaptitude of the genital organs for the act of copulation; whereas sterility consists in an aptitude for copulation, but impossibility of the individual reproducing its fellow.

For the due performance of copulation, several acts must be combined, namely: 1, *erection of the penis*, which shall last a sufficient time for the intromission of the virile member; 2, *a due amount of well-formed semen in the vesiculae seminales*; and 3, *the power of ejaculation*. Now, as impotence may depend upon a want of due spontaneous action and performance of these various acts and functions, I shall devote a few pages to a consideration of the subject, so that the reader may form a correct notion of the causes which influence the morbid function, and thereby be able to arrive at the best means of remedying the complaint.

1. *Erection.*—The immediate cause of erection of the penis depends upon distension, with blood, of the venous plexuses contained within the external fibrous membrane or sheath of the corpus cavernosum penis, and corpus spongiosum urethrae. This strong fibrous tissue surrounding the plexuses, as well as that lying in their intervals, limits the distension of the vessels, and during its erection gives to the virile organ its condition of tension and firmness. This distension is further maintained by the temporary inability of the blood to pass again into the general circulation, from the compression kept up by the uniting tendons of the ischio-cavernosi and bulbo-cavernosi muscles.

Under the influence of erotic ideas,* or under stimulus applied to the virile organ itself, this distension occurs. In the former case, the brain or spinal chord is brought into communication with the penis through the motor fibres of the pudic nerve, and this turgescence of the organ follows. In the latter case, when stimulus is applied to the penis, the centripetal nerve-fibres convey the impression to the nervous centre, and the impression is conveyed back by the centrifugal nerve-fibres to the muscles, causing their contraction, by which the veins, returning the blood from the penis, are compressed. These reflex acts, although essentially involuntary, may be accomplished independently of the will, although they admit of being modified, controlled, or prevented, by a voluntary effort.—*Kirk's and Paget's Physiology*, pp. 143, 375, 392.

2. *A Due Proportion and Proper Quantity of Semen in the Vesiculae Seminales.*—In the section on Spermatorrhœa (page 155), I entered at some length into the consideration of the spermatic fluid, and I described all that we knew of its healthy characters. I likewise stated that we occasionally found it deficient in spermatozoa in various diseases; that it was often found watery; and that it lost its special characters, although retaining its characteristic odor. I likewise stated that when such imperfectly-formed semen existed in the vesiculae seminales, less pleasurable sensations were experienced on its emission. Under the microscope the globules are very small and very brilliant, but without any appearance of tails.—*Lallemand*, vol. iii., p. 7.

“ Healthy semen contained in the vesiculae seminales tends toward promotion of the normal act of connection, by exciting a natural irritation which is

* There are authors who assert that erections depend wholly on the presence of well-formed semen in the vesiculae seminales. This however is incorrect, as Sir A. Cooper states that a patient of his, from whom he had removed both testes, was able, some time after ablation of the organs, to have connection, accompanied with the feeling of ejaculation, and even at a later period erection of the penis took place, but without the sensation of emission. In the East, the value of a eunuch is much enhanced by ablation of the penis, as removal of the testes alone does not suffice to prevent erection.

conducted to the spinal chord, and thence reflected, excites the successive and co-ordinate attraction of the muscular fibres of the vasa deferentia and vesiculae seminales, and of the bulbo-cavernosi and other muscles of the urethra ; and a forcible expulsion of semen takes place, over which the mind has little or no control, and which, in cases of paraplegia, may be unfelt."—*Kirkes and Paget's Physiology*, p. 392.

3. *The Power of Ejaculation* in the healthy subject takes place under the influence we have just described, and bears a very important part in the functions of the generative organs.

Such, then, being the relative functions of these organs when properly performed, let me next direct the reader's attention to a consideration of

THE CAUSES which prevent the act of copulation being properly performed. In the first place stands want of power of erection. The continually flaccid state of the penis depends upon many causes ; among others, a deficiency of well-formed semen in the vesiculae seminales is one of the most common ; this, again, depends upon venereal excesses, or upon diurnal pollutions spoken of above. Lallemand says : "The loss of virility, whenever we are unable to attribute it to any apparent cause, ought to be ranged among the local symptoms of diurnal pollutions, and among the most certain ones."—(Vol. ii., page 379.)

Again, the same author states : "When a patient complains of a notable and permanent diminution in the energy of his generative functions without apparent cause, we may be convinced that he is the subject of diurnal pollutions." (Vol. ii., p. 381.)

One of the most common causes in persons who consult us on account of impotence, is a lax scrotum and enlargement of the spermatic veins. There is no derangement of the sensations or functions of the testes which may not arise from this cause, and the condition of the scrotum and testes is therefore the first thing a surgeon should observe in these patients.

In some instances temporary impotence, depending upon non-erection, is caused by fear, disgust, or timidity. In other instances ill health, anxiety, prolonged intellectual employment, or injuries to the head, are among some of the many causes to which you can trace a large number of the temporary causes of supposed impotency ; for the complaint is often a chimerical one, and patients suppose themselves to labor under impotency because they have no desire for the opposite sex, and consequently think themselves unable to marry.*

It is not my intention to remark on the influence that imagination exercises on the generative organs ; Hunter has cited a case (page 263), and I could add many to the category, showing that if a man is impressed with the idea that he is impotent he may remain so. To all who come to me in despair, I am in the habit of asking them whether they have erections on first waking in the morning ; if they answer in the affirmative, I assure them that impotency must depend upon some temporary cause, viz. fear, &c., and that a speedy cure can be effected. The look of gratefulness evinced by these poor sufferers must be seen to be appreciated. They labor under the idea that through their own misconduct they have become impotent, and that they shall never be able to regain the power. On several different occasions they have essayed sexual intercourse, but in vain ; have tried all the quacks and nostrums, until, in despair, they neglect society, which they suppose scorns them. Supposed impotency has, I believe, made many a misanthrope. The recollection that they have morning erections gives them renewed confidence. They now believe that impotency can not be real, and they commence the treatment with courage, in

* M. Lallemand calls these, cases of *relative impotence*, the patient possessing sufficient power of erection to allow of masturbation, but not of sexual intercourse—hence his dislike to associate with females.

the full expectation that they must repossess these much valued powers, and they are seldom deceived.

When, however, morning erections never occur, the prognosis is not so favorable : in such cases it will be found that men have taxed their powers at a very early period of their lives, or continued them during a long series of years ; it will be found that cohabitation may excite desires, but that erection will not take place. The virile organ will only assume a semi-erect state, a little fluid may ooze out of the meatus before erection, but intromission will be often impossible ; repeated attempts may be made with as little effect and the same results ; and it is, I fear, the morbid desire of such worn-out rakes to induce perfect erection, that gives occupation to procresses, furnishes a sale for obscene books, and contributes its quota to those deplorable cases of attempted rape and indecency too often alluded to in our police reports.

Man is not at once brought down to this abyss ; he must, and generally has, swallowed for a long time in the slough of vice ; it is by slow and gradual degrees he has increased the dose of excitement ; he at first sipped the cup of pleasure, but at last he finds no excitement except in its very dregs. Like the habitual opium-eater or the drunkard, moderate quantities fail in their effects, additional excitement must be had, at whatever risk the penalty will be incurred ; and if confinement is necessary for the man laboring under delirium arising from brandy or opium, I doubt whether a lunatic asylum is not the proper place instead of a prison for criminals of the class above noticed. In those institutions it should be ascertained if their depraved habits did not depend upon some functional derangement of the organs of generation (mentioned at page 170), which has stimulated a morbidly affected brain, and desires that have never known control.

In the preceding paragraph I have alluded to cases in which nature refuses to produce erection unless under some strong excitement. The individual who thus resorts to morbid stimulants will sooner or later have cause to regret them ; even the old man who marries a young wife should be cautioned of the risk he runs in being tempted to commit venereal excesses. We see the worst effects of old men marrying young wives, and, not to mention sudden death, the surgeon conversant with the private history of the fashionable world, can relate many instances of paralysis, fatuity, imbecility, and other nervous lesions, determined by these ill-assorted matches ; the drain on the system is too great, food and powerful stimulus may urge on the tottering debauchee, semen is secreted, but the nervous energy sinks never to rise again ; and I have good reason to believe that more than one designing female who has married a rich dotard, has, in a spirit worthy of the French *empoisonneuse*, invented a new and unindictable means of cutting short the existence of the rich foolish man, who falls a victim to erotic passions, which in the ordinary course of nature had subsided, and should not again have been revived by unnatural excitement.

There is, however, another form of impotence with which surgeons in large practice are familiar ; I allude to cases in which persons complain that erections take place, accompanied with pleasurable sensations, but that emission does not follow ; in such cases we should always suspect stricture, which may cause the semen to pass back into the bladder, and the introduction of a bougie will speedily clear up all doubts, or a microscopic examination of the urine may be made, when spermatozoa will be detected. Civiale makes the following observations on the subject :—

" Among other local effects produced by stricture of the urethra which demand the especial attention of practitioners, because they furnish valuable information in establishing a diagnosis, and in the appreciation of the progress of the disease, stand those disorders which we observe in the functions of generation. Erection rarely takes place compared to its frequency in persons in

good health. This may depend upon the penis being unable to attain erection, in consequence of the rigidity of the canal, or from the blood not having a free passage through the corpora cavernosa. Ejaculation takes place with difficulty, slowly, and often incompletely; the semen passes out in a dribbling manner, and some time after; for as long as the venereal orgasm lasts, the semen is retained as well as the urine behind the stricture, which at these moments is more contracted than at others. In conclusion, old strictures produce impotence, not only because they oppose an impediment to the ejaculation of the sperm at the moment it should pass out, but because the inflammation of the urethra existing behind it often spreads to the testicles. I have seen a great number of persons regain the aptitude of impregnating, which has long been lost, by a cure of stricture."—*Civiale sur les Mal. des Org. Gen.*, vol. i., page 137.

TREATMENT OF IMPOTENCE.—The immortal Hunter makes the following remarks which I shall insert: "As the parts of generation are not necessary for the existence or support of the individual, but have reference to something else in which the mind has a principal concern, a complete action in those parts can not take place without a perfect harmony of body, and of mind; that is, there must be both a power of body, and a disposition of mind; for the mind is subject to a thousand caprices, which affect the actions of these parts.

"Copulation is an act of the body, the spring of which is in the mind; but it is not volition; and according to the state of the mind so is the act performed. To perform this act well, the body should be in health, and the mind should be perfectly confident of the powers of the body; the mind should be in a state entirely disengaged from everything else; it should have no difficulties, no fears, no apprehensions; not even an anxiety to perform the act well; for even this anxiety is a state of mind different from what should prevail; there should not be even a fear that the mind itself may find a difficulty at the time the act should be performed. Perhaps no function of the machine depends so much upon the state of the mind as this.

"The will, and reasoning faculty, have nothing to do with this power; they are only employed in the act, so far as voluntary parts are made use of; and if they ever interfere, which they sometimes do, it often produces another state of mind which destroys that which is proper for the performance of the act; it produces a desire, a wish, a hope, which are all only diffidence and uncertainty, and create in the mind the idea of a possibility of the want of success, which destroys the proper state of mind, or unnecessary confidence.

"There is, perhaps, no act in which a man feels himself more interested, or is more anxious to perform well, his pride being engaged in some degree, which, if within certain bounds, would produce a degree of perfection in an act depending upon the will, or an act in voluntary parts; but when it produces a state of mind contrary to that state, on which the perfection of the act depends, a failure must be the consequence.

"The body is not only rendered incapable of performing this act, by the mind being under the above influence, but also by the mind being perfectly confident of its power, but conscious of an impropriety in performing it; this, in many cases, produces a state of mind which shall take away all power. A conscientious man has been known to lose his powers on finding the woman he was going to be connected with, unexpectedly, a virgin.

"Shedding tears arises entirely from the state of the mind, although not so much a compound action as the act in question; for none are so weak in body that they can not shed tears; it is not so much a compound action of the mind and strength of body, joined, as the other act is; yet if we are afraid of shedding tears, or are desirous of doing it, and that anxiety is kept up through

the whole of an affecting scene, we certainly shall not shed tears, or at least not so freely as would have happened from our natural feelings.

"From this account of the necessity of having the mind independent, respecting the act, we must see that it may very often happen that the state of mind will be such as not to allow the animal to exert its natural powers; and every failure increases the evil. We must also see from this state of the case, that this act must be often interrupted; and the true cause of this interruption not being known, it will be laid to the charge of the body, or want of powers. As these cases do not arise from real inability, they are to be carefully distinguished from such as do; and perhaps the only way to distinguish them is, to examine into the state of mind respecting this act. So trifling often is the circumstance which shall produce this inability, depending on the mind, that the very desire to please shall have that effect, as in making the woman the sole object to be gratified.

"Cases of this kind we see every day; one of which I shall relate as an illustration of this subject, and also of the method of cure.

"A gentleman told me that he had lost his virility. After above an hour's investigation of the case, I made out the following facts: that he had, at unnecessary times, strong erections, which showed that he had naturally this power; that the erections were accompanied with desire, which are all the natural powers wanted; but that there was still a defect somewhere, which I supposed to be from the mind. I inquired if all women were alike to him; his answer was, no; some women he could have connection with as well as ever. This brought the defect, whatever it was, into a smaller compass; and it appeared there was but one woman that produced this inability, and that it arose from a desire to perform the act with this woman well; which desire produced in the mind a doubt, or fear of the want of success, which was the cause of the inability of performing the act. As this arose entirely from the state of the mind, produced by a particular circumstance, the mind was to be applied to for the cure; and I told him that he might be cured if he could perfectly rely on his own power of self-denial. When I explained what I meant, he told me that he could depend upon every act of his will, or resolution; I then told him, if he had a perfect confidence in himself in that respect, that he was to go to bed to this woman, but first promise to himself, that he would not have any connection with her for six nights, let his inclinations and powers be what they would; which he engaged to do, and also to let me know the result. About a fortnight after, he told me that this resolution had produced such a total alteration in the state of his mind, that the power soon took place; for instead of going to bed with the fear of inability, he went with fears that he should be possessed with too much desire, too much power, so as to become uneasy to him, which really happened; for he would have been happy to have shortened the time, and when he had once broken the spell, the mind and powers went on together; and his mind never returned to its former state."—*Adams's edition of Hunter's works*, page 277.

As impotency, however, does not alone depend upon the cause above alluded to, the treatment prescribed by Hunter would fail under a variety of other circumstances. For instance, a man will come to his surgeon complaining that he is impotent; on inquiry it may be found that erection, intromission, and the feeling of ejaculation, take place, yet no semen passes from the meatus; in such a case as this the surgeon will suspect stricture, and the passage of an instrument will corroborate his conviction, and show that the semen is forced back into the bladder instead of forward along the canal. Need I state that the cure of stricture will relieve this form of impotence? Impotence, or rather the ability of impregnating a woman, will often depend upon "a want of correspondence between the actions of different organs," as Hunter has stated above.

Emission may take place before intromission of the virile member, consequently semen can never be brought in contact with the uterus of the female ; this usually arises from alarm or inability to control ejaculation. In the words of Hunter, "the secretion of the semen shall be so quick, that simple thought, or even toying, shall make it flow," and the proper treatment of which has been already spoken of.

In some cases, as Hunter further observes, "when the erection is not strong, it shall go off without the emission;" but I doubt much if erection will take place without the power of emitting semen, unless under unnatural excitement, or except in cases of lesions of the spinal chord.

The want of power of erection in young men depends (see page 178) upon an habitual loss of semen, and the surgeon should investigate the case, and attempt to discover under what circumstances that loss occurs ; let it be checked by the means stated at page 172, and erections will again occur. In all these delicate questions the greatest sympathy should be expressed for the sufferers, or they will not unburden their minds, and no trouble should be spared in order to arrive at a true appreciation of the case, which will alone point out a correct line of treatment. It may be necessary to examine the urine of these patients, and spermatozoa will be often found in abundance in that fluid, showing that the semen passes into the bladder instead of by the meatus externus.

In the *used-up* adult, the same precautions should be taken to ascertain if semen is lost, and similar treatment followed. It is in the power of many a medical man to cure the hypochondriac in this way, and he may become the instrument of preserving many a patient from committing suicide.

It is a popular notion that cantharides act as a very powerful stimulus on the generative system ; that this drug possesses this power there can be little doubt, but that it may act very injuriously on the constitution of those laboring under impotence, any one who has read the preceding remarks must conclude ; in cases in which semen is secreted it can be of little use ; but, on the contrary, may only tend to further stimulate extra secretion, and reduce the patient's strength ; but cantharides are unable to produce that correspondence between the action of the different organs, a due fulfilment of which is so necessary for rendering intercourse between the sexes productive. This must be effected by means above mentioned, and cantharides may be employed in exceptional cases, which will readily occur to the medical man, viz., in patients who never have priapism, for cantharides appear to induce erection in certain persons, not in all. Let him be cautious about recommending it ; it is the general remedy of quacks, and may produce great mischief, as the following case will show. I was requested by Dr. Swaine to see a gentleman with inflammation of the iris and deep structures of the eye ; my patient stated, that being about to marry, he had put himself in the hands of the quacks, who had given him cantharides, and after a few weeks inflammation in his eyes came on. Now I do not know what connection there can have been here between the supposed cause and effect, but I may mention it as a singular case ; others may have seen similar ones.

Lastly, the surgeon should be put on his guard against treating simulated cases of impotence, as every species of deception will be practised on him. A young man called on me during the last summer, giving an account of all the symptoms of an aggravated case of impotence, under which, according to his own statement, he was laboring ; the symptoms were so well described, that I suspected they were assumed, and on passing an instrument, found the urethra perfectly healthy. I prescribed a slight tonic, and laying down some hygienic rules, added, I thought little ailed him. My patient did not return, but some short time afterward I saw the individual arm in arm with a reputed quack, entering the door of the firm, and I have little doubt he was but a decoy-duck,

sent to ascertain what was the treatment proper in such cases. Let us hope that these advertising leeches follow my prescriptions, as the expectant plan can not do any harm to the constitutions of their victims.

Stories are current that patients laboring under morbid irritability will induce surgeons to pass instruments in order to excite erotic ideas and pleasurable sensations; none such (that I am aware of) have ever applied to me, but I can readily understand that such cases may occur, and that excitement may be sought for on the same plan as in the cases related by Chopart and Dupuytren, of peasant-boys reduced to the last state of debility by masturbation, and who were in the habit of introducing pieces of straw or twigs into the urethra, having found that no other stimulus would further excite emissions; and the breaking of one of these was the cause of their being brought into the hospital, when they confessed the fact. I mention the case as a caution for the young surgeon not to pander to depraved tastes.

To the old debauchee, who, under the pretence of seminal weakness, comes to have a fillip given to his fast-sinking powers, let the surgeon act with the dignity he owes to himself and his profession, but let him not omit to charitably point out to the patient the result of the course he is pursuing. Let him cite cases (which the patient may verify by inquiry into the world) of the fatal consequences of old men taxing their powers too much; and let the surgeon attempt to discover if there be not some morbid cause of excitement in the generative system of these men; but above all things let him appeal to common sense, and avoid saying anything which the patient may consider in bad taste; unless he does this, all hope of redemption is past; the patient suspects the surgeon, considering he is stepping out of his province, and says he came to consult him professionally, not listen to the conventicle. Great real good may be done in this world, even among the veriest rakes, but it requires some little share of tact. All may have the wish, but, judging from results, few possess the means, or at least follow the course most likely to reclaim the profligate.

There are still some modes of treatment for impotence which are occasionally put into practice, that deserve a passing notice; not that we believe they can be of any effect in remedying the complaint, but, inasmuch as the supposed remedies lead to great mischief, they deserve a few observations here.

Lallemand says: "We read in many serious authors, that old feeble husbands, who are nearly impotent, should seize this opportunity,"—(*he is speaking of the moment of waking in the morning, when the accumulation of urine in the bladder is a powerful cause of excitement to the genital organs,*)—"and profit by the happy disposition in which they thus find themselves to perform effectually their conjugal duties. However, more unfortunate advice has never been given. In fact, these erections are deceptive, inasmuch as they do not arise from a real want. A union of many circumstances being necessary for the accomplishment of the act, we may affirm, without dread of being deceived, that it is injurious; that it is a true *excess* in regard to the debility of these individuals; if the attempt should be persisted in, it must have the most deplorable results."—*Lallemand, vol. i., page 630.*

CHAPTER III.

BLENNORRHAGIA IN THE FEMALE.

THE reader need not be reminded of the definition of blennorrhagia; sufficient, I hope, has been said in former pages to show that discharges may come on in the female without her being an unchaste person—may occur in married life, or be the result of contagion. In private practice, however, blennorrhagia, the result of contagion, is very uncommon; we are generally called on to treat females laboring under blennorrhagia, the result of some of the lesions (to be hereafter mentioned) which arise *de novo* in the female organs of generation, and which have, and would for a still longer time, have passed unnoticed, had they not produced gonorrhœa in the persons with whom they cohabit. I have known many instances in which men laboring under gonorrhœa have had connection with healthy women, and yet the latter have escaped the contagion. This is not so surprising when we consider that the vagina and os-uteri are constantly lubricated and covered with mucus, which sheaths the delicate membrane beneath, from the contact of the contagious matter. It is rarely, except in hospitals, that blennorrhagia, the result of contagion, is seen; and yet this is not the common opinion, but it may be laid down as a general rule, that women give many more gonorrhœas than they receive; in fact they originate the disease, and, unlike syphilis, we can trace blennorrhagia to its source, which we shall attempt to describe.*

* Discharges from the female genital organs under certain circumstances are not, however, confined to the human species, as the following case shows:—

“LEUCORRHOEA IN A MARE.” By H. J. FITTER, M. R. C. V. S., Wolverhampton. To the Editor of the ‘Veterinarian.’ November, 1849, p. 604.

“DEAR SIR: Fully convinced that you feel gratified by any member of the veterinary profession sending you cases for insertion in your journal, conducive to the advancement of the science, and knowing that your journal is not only read by the senior branch of the profession, but likewise by the junior, to whom illustrations are useful, I send you a case of leucorrhœa in a mare. It is not disease that is very prevalent in this animal, at least not so much as gonorrhœa.

“I am confident that practitioners who have served apprenticeships in large towns, and eventually establish themselves in one, rarely, if ever, see a case of this description. In breeding countries and racing establishments, however, we sometimes meet with them. In any accounts, therefore, of cases of parturition, it is possible this case may prove of some utility.

“To distinguish leucorrhœa from gonorrhœa, it is necessary to attend to the following circumstances. In the latter the discharge is constant, but in small quantities; there is much itching of the pudendum, and swelling of the labia, and I have frequently seen also ulceration to a great extent of these parts. The mare is often at *ostrum*, there seeming to be in these cases an increased desire to venery; whereas, in leucorrhœa the discharge is irregular and in considerable quantities, and is neither preceded by nor accompanied with any inflammatory symptoms.

“I was requested by Mr. Whitehouse, a gentleman living at Codsall, about six miles distant from me, to examine and give my opinion about a bay hackney mare laboring under a profuse discharge from the vagina. The discharge was of a thick yellow shining nature, and was issued to the extent of more than half a gallon per diem. The history of the case, of which Mr. W. kindly gave me the particulars, is as follows: This well-bred mare was put to the horse called the ‘Libel,’ own brother to the celebrated entire horse ‘Touchstone,’ and about six weeks after exhibited discharge *per vaginam*. I know of several mares that were put to the same horse without having experienced any such contamination. The discharge collected within the *pudendum*, in the *fossa navicularis*, and used to come away in gushes from the parts. The sides of the vulva were agglutinated by the discharge forming incrustations around its orifice. The mucous membrane did not put on any appearance of inflammatory action, but seemed rather blanched. The discharge flowed in that abundance that it ran down the thighs. Could the discharge proceed from immoderate coition, or was it the effect of the large convexity of the horse not properly adapting itself to the concavity of the mare, beautifully as Nature has fitted them for each other? The organs of generation in this mare are evidently very small, and there is not a doubt but the force applied was the cause of setting up irritation in the membrane lining them.

“The mare was poor and emaciated; had a staring coat, and a large pendulous abdomen: though a fine frame, and was in estimation previous to her becoming diseased. The gentleman who kept the entire horse gave Mr. W. very little hopes of her recovery, he having had one die from the same cause.”—*The Veterinarian*, Nov., 1849, page 604.

The discharges in the female may come from the vulva, urethra, vagina, or uterus; either one may be affected separately, or the whole become implicated at the same time. To render the symptoms and treatment of these complaints more easy, I shall describe, seriatim, each form of the disease as it appears when uncomplicated, commencing with blennorrhagia of the vulva.

SECTION I.

BLENNORRHAGIA OF THE VULVA.

THIS affection closely resembles balanitis in the male, the same causes may produce it, such as inattention to cleanliness, and the same treatment is applicable to the cure, namely, nitrate of silver; but as the situation and function of the vulva present peculiarities, I shall translate the following passages from a recent lecture of M. Ricord in the *Gazette des Hopitaux*.

“SYMPTOMS.—This complaint may effect the epithelium of the mucous membrane only, or, gaining the deeper parts, may occupy the glands or follicles, or even the vulvar glands, which we have compared to Cowper’s glands, and which, according to M. Moulinier, ought to be regarded as the organs secreting the venereal virus. In the first stage, before the eye can detect any local change, the patient complains of an unusual sensation in the genital organs, and sexual intercourse is desired; there is itching, redness, heat, and swelling. The secretion now becomes greater; at first it is but an augmented flow of the normal moisture, but soon it becomes irritating, and adds to the inflammatory state. The discharge, however, soon takes on a muco-purulent character, and this is more apparent in proportion as the follicles become the seat of the disease. If the inflammation gains the deeper portions, considerable swelling occurs, which may assume an œdematosus character, or become phlegmonous; when the nymphæ, naturally large, become inflamed, their size may increase to such an extent, that they may be protruded beyond the larger labia, and constriction of them take place, resembling what happens in paraphymosis. Not unfrequently abscess follows these œdematosus swellings. In stout women, the complaint may extend laterally to the groins, producing a most offensive discharge, attended with an eczematous state of the skin. The inflammation may likewise gain the apertures of the vulvar glands, which M. Huguier has so well described, and may reach the parenchymatous structure of these glands, and they may be felt through the thickness of the labia, as little abscesses, or they may gradually disappear, or may form cysts, which are not unfrequently found in this situation.

“A very frequent symptom of vulvitis is the exaggerated sensibility of the vulva, which is principally confined to young women. In long-standing cases of vulvitis, the passage may become narrowed so much as to produce a sort of stricture of the entire canal. This blennorrhagic affection of the vulva produces great sexual desire, attended with secretions and lascivious dreams, which if occurring frequently, appear to weaken the patient considerably.*

“TREATMENT.—Among prophylactic means, cleanliness stands first. Vulvitis, like balanitis in the male, may come on in consequence of inattention to washing the parts. In the commencement a soothing plan should be employed, and separation of the surfaces attempted, followed by the use of lotions of nitrate

* I lately witnessed such a case in a girl that was sent to an asylum uncured of vulvitis; the disease returned while an inmate, and she was discharged from the institution; the only treatment employed was a common injection, which of course could do little toward relieving her of this painful and distressing form of nymphomania.—W. A.

of silver in the proportion of one dram to two ounces of distilled water, with the addition of warm baths. Under these means a rapid cure results. If the inflammation has gained the deeper structures, the soothing plan is the best, or leeches may be applied to the groins; nitrate of silver lotions may be employed; if a phlegmonous condition of parts occurs, it may be better to rely only on depletion. The moment an abscess is formed it should be opened; for pus has a great tendency to burrow in the loose cellular tissue, and make its way to the rectum, perinæum, or vulva, and recto-vulvar fistula may result: If the abscess is seated in the vulvar gland, it should be opened early. There is only one circumstance which should cause us to pause, namely, when inflammation occurs around an already formed cyst. It would be out of place to give a detailed description of recto-vulvar fistulæ, but I may mention that great good will result from compression in the course of the fistula, together with injections of strong solution of nitrate of silver, or cauterizing the surface with the solid caustic. This cauterization should be rapidly executed if you wish the parts not to retract; sometimes scarification of the edges will do good.

"As a consequence of chronic vulvitis, partial morbid secretion may be observed in the folds of the passage, particularly between the nymphæ and carunculæ. These secretions, which only become apparent when the surfaces are pressed, are very difficult to be got rid of by means of astringent injections or even caustic. They arise from the follicles which are hypertrophied, and being seated at a great depth, can only be reached by a narrow neck. To destroy these diseased parts, a narrow bistoury should be passed into the canals leading to them; a free opening having been made, the surfaces should be freely cauterized, or filled with lint."—*Gazette des Hopitaux*, vol. 1848; p. 212.

SECTION II.

BLENNORRHAGIA OF THE URETHRA.

CAUSES.—M. Ricord says: "The female as well as the male is liable to blennorrhagic urethritis. We may say that in her case there is something special, for we almost always meet with urethritis in the female as a consequence of sexual intercourse; whereas vulvitis, vaginitis, and the other forms, may come on independently of connection, and may arise spontaneously: hence the urethral form of the complaint is much less frequent than the other varieties of disease of the female sexual organs just mentioned. The position of the female urethra furnishes an explanation of this exemption, for it can rarely come in contact with the discharge from the male organ, whereas the vagina and uterus are much exposed. Micturition frequently occurring, furnishes another reason why the urethra in the female is rarely attacked. As a question of medico-legal inquiry, however, it must be stated that in women really affected with blennorrhagia—that is, among females constantly exposing themselves to contagion—urethritis is not an uncommon complaint."

SYMPTOMS.—"The affection commences by a pricking sensation or considerable itching. The urine scalds, and the desire of micturition occurs frequently. If the patients have been subject to the *whites*, they can distinguish the difference between the discharge which now appears and that to which they have been subject. The scalding may become very severe, a difficulty in passing water may arise, and even in some few instances there is retention of urine. If the neck of the bladder becomes implicated, the desire of micturition increases, and we have pain and tenesmus; frequently blood accompanies the last few drops of urine.

"The pain, which in the male is very violent, rarely, however, assumes the same severity in the female. If the patients make water just before the surgeon examines them, although the canal is very large, it will nevertheless retain but a small quantity of discharge; and the surgeon, in making a strict examination, should be careful that his patient has not recently passed water: and this being ascertained, let him introduce the finger into the vagina as far as he can, and then press the urethra from behind forward: if muco-pus be present in the urethra, it will at once be evident. This plan is the more necessary when the patient may have reasons for concealing the affection. The surgeon must likewise be aware that the stains on the linen should be looked for on the back of the linen, and not, as in man, on the front."

Blennorrhagic bubo is a rare affection in man; it is a still less frequent complication in women; and even in vulvitis—the analogous complaint to balanitis—it is of very uncommon occurrence. In acute cases the least pressure on the urethra, and consequently sexual intercourse, becomes intolerable. In these instances the disease runs through the different phases we have previously studied in the male urethra, with the exception of chordee, which can not occur in the female. When it has run through the acute stage, the disease gradually declines, and the patient recovers entirely or the complaint passes into a chronic state. Gleet may remain, to which patients pay little attention, in consequence of the situation of the parts. The affection may produce thickening of the walls of the urethra; induration of the canal, vegetation, or cicatrices, may be left, as we noticed in speaking of urethral diseases in the male. Nevertheless, stricture in the urethra of the female is a very rare affection.

TREATMENT.—The same indications must be followed here as in urethral blennorrhagia in the male, with the exception of the treatment for chordee. The abortive treatment may be successfully employed; direct application of the solid caustic may be tried—but, unfortunately, females rarely apply to surgeons until the disease has existed some time, when this treatment can be no longer efficacious. In addition, the balsams, such as copaiba and cubebs, may be employed. In the acute stage, antiphlogistic treatment may be prescribed and demulcents recommended; but we should as soon as possible employ again the anti-blennorrhagics—caustic, and the balsams.

SECTION III.

BLENNORRHAGIA OF THE VAGINA.

I HAD intended giving my own account of the symptoms and appearances of vaginitis; but M. Boys de Leury, surgeon to the hospital in Paris where the registered prostitutes are treated, has written so admirable a paper on the subject, that I have preferred translating it, to publishing what I had written from my own experience:—

"Inflammation of the vagina may exist alone and without any complication. Let us at once state that the greater number of authors, even those who have written most recently on the subject, confound, under the name of blennorrhagia, vaginitis with catarrh of the uterus. These two diseases are perfectly distinct; in fact, what analogy or relation is there between them? Are the symptoms of acute or chronic vaginitis identical with those attending catarrh of the uterus in its acute or chronic form? The diagnosis of these two affections is not a matter of indifference, and the therapeutical means will vary according to the case. And as we now possess a means of viewing the parts so per-

fectly as the speculum affords, obscurity in medical language is no longer permitted.

" As we stated at the commencement, vaginitis is met with more frequently at this hospital (St. Lazarre) than affections of the urethra. We notice it most frequently among young girls of fourteen to twenty years of age. After that age it is a rare affection, at least in a truly inflammatory condition, and we in consequence shall describe the affection as we find it in young girls.

" **SYMPOTMS.**—Vaginitis presents itself with the following characters: inconvenient itching or heat in the affected part; the vagina appears to the patient to be shrunk; she thinks she experiences a swelling of the mucous membrane: swelling does really exist, for, in fact, the external sexual organs are tumefied and everted: this explains why the patient finds a difficulty in walking or even in sitting down. Women complain of pain in the vulva every time they make water, although no urethritis be present. On examining the interior of the vagina, we first remark pus lying between the folds, so that the canal, at the moment the speculum is introduced, presents two colors very distinctly, the furrows being of a yellow or greenish puriform shade, the projecting portions of the folds of mucous standing out in relief, of a vivid red. The discharge almost always exhales a very fetid odor; during the acute period of the disease it becomes modified, until it retains no smell at all. If the pus is removed, the mucous membrane underneath it is found of a still brighter red. Sometimes erosions are remarked on its surface. These erosions present themselves in the form of red lenticular spots, similar to those we have described as existing on the neck of the uterus, and which give the mucous membrane a salmon-colored aspect. In some cases the disease occupies the entire vagina; in other instances the two inferior thirds or even its upper half. In this latter case the os participates in the condition of the vagina, and assumes a brownish-red color, attended with augmented sensibility.*

" Chronic vaginitis usually follows the acute inflammation of the vagina. The menstrual period—producing as it does a determination of blood to the sexual organs—increases the discharge at a moment when the surgeon hopes he has removed it; we not unfrequently see women brought to St. Lazarre with a most abundant yellow or green discharge, without complaining of the least pain. Baths, astringent injections, a few days' rest, suffice for the disappearance of these discharges, which, according to the statement of the women, follow every menstrual period. We should here remark that essentially chronic discharges

* M. Boys de Leury, in this excellent article, has not entered quite as much into the detail of the PATHOLOGY of the blennorrhagic affections of the vagina as I could wish. I shall therefore speak of some of the appearances I have found in the cases under my care at the Ourcine hospital at Paris, when I performed the duties there in 1839.

In vaginal blennorrhagia I have found the mucous membrane in its whole extent, or in isolated points, of a red color, accompanied by swelling, heat, and pain, unattended by any secretion—thus presenting an erysipelatous state, which may last a short time, and then disappear. I have seen other cases, presenting the first stage of catarrhal inflammation, give rise to a morbid secretion, the color and consistence of which are very variable. This difference seems to have no reference to the cause which has produced it.

In examining the vulva, vagina, or the neck of the uterus, I have observed the mucous membrane covered with papulae or follicles, more or less developed, constituting papular vaginitis, or utero-vaginitis.

To persons not conversant with this appearance I would point out the analogy to be seen in granular states of the eyelids in chronic stages of ophthalmia.

Sometimes the disease assumes the form of small spots, in size not larger than a pin's head, and isolated, or more or less confluent. In other cases, these papulae look like granulations deprived of their epithelium; lastly, they may assume a fungous appearance, or take on the form of vegetations.

On the same portions of the mucous membrane we have distinctly seen patches more or less numerous, and varying in extent, which have a striking analogy with the suppurating surface of the skin on which a blister has been applied, and which resembles the condition of excoriation noticed in balanitis in the male. M. Ricord has likewise witnessed a case in which an eruption of herpes phlyctenodes was present on the neck of the uterus and the posterior part of the vagina. Lastly, we may find ulcerations of every description seated on the whole or any part of the surface of the genito-urinary mucous membrane.—W. A.

exist, which, not habitually contagious, may become so under many sorts of excitement, particularly excess in drinking spirituous liquors. In consequence, the police often bring us women from the Barrière,* who present on examination a mere sero-mucous discharge, without the vagina being red or inflamed; the urethra presents no marks of disease, and yet these women have infected a great number of soldiers, who suffer from gonorrhœa.

" The large number of patients sent to St. Lazarre on account of chronic discharges, acknowledge as the principal cause, the abuse of connection, an inevitable result inherent in their wretched calling; but this *hypercrinie* has not its origin in a cause so purely mechanical; it depends in certain cases on a general constitutional state. On this account we meet with it in women of a lax constitution, with lymphatic temperaments, subject to catarrhal diseases, who are miserably fed, living in damp, badly-lighted, or ill-ventilated situations. In the last case the mucous membrane of the vagina becomes the seat of a considerable alteration, it is hypertrophied as well as the follicles which cover it; it presents here and there spots of a brownish-red or livid color. If we are surprised at the obstinacy of the complaint, which resists all the ordinary modes of cure, it is because this alteration requires an energetic treatment, which alone is capable of entirely changing the nature of the secreting surface.

" The discharge in chronic vaginitis is usually of a yellowish-white color, more or less consistent, sometimes becoming grayish-white.† These chronic discharges are not usually contagious, although they may become so under certain conditions, but principally just before and just after the appearance of the menses.

" One variety of chronic vaginitis, which has been carefully described by Dr. Deville (*Archives Generales*, 1844), as *granular vaginitis*, but which more properly should be called *papular vaginitis*, is a disease which is more difficult to cure than the last form described. This depends perhaps on the physiological cause which produces the affection in these women, for pregnancy exists in nineteen twentieths of the women who have granular vaginitis.

" It is characterized by little round or elongated projections generally separated one from the other; they occupy principally the upper folds of the vagina. These little eminences are conspicuous in the vagina in consequence of their dark or brown-red appearance. [See note, page 188.] It is in the posterior part and superior portion of the vagina that we meet with them most frequently. In other respects they are very indolent. The discharge in this variety of vaginitis is at one time white, thick and creamy, at others yellow or green; it is always very abundant. We have principally observed this complaint in women during the last months of pregnancy, a circumstance depending no doubt on the abundance of secretion of these parts during pregnancy. In no case have we observed them produce any unfortunate result on the pregnancy. As

* A sort of suburb outside the walls of Paris, where the wine-shops exist.

† THE DISCHARGES found in affections of the vagina are as various as are the appearances above described: the secretion may be serous, milky, mucous, purulent, or sanious, according to the greater or less inflammation present; in no case, however, does it consist of that stringy tenacious mucus (a microscopic drawing of which is given at page 200), which always comes from the glands within the os-uteri; this secretion is often found in the vagina, but it always comes from the os-uteri, *out* of which it may often be drawn. M. Donnéc, a French microscopical observer, has observed the trichomonas, an animalcule said to be peculiar to secretions of the vagina in the discharge, but I do not know any practical bearing such a discovery has yet had. The secretion itself is acid, in this respect differing from the secretion of the os-uteri above alluded to. Under the microscope various appearances are found, consisting of epithelium scales, mucus, or pus globules, in more or less quantities, but which form no practical guide.

The surgeon should be aware that the traces of a discharge are to be looked for, not on the front part of the linen, as in the male, but behind; and if a woman keep herself clean by frequently washing the parts, or retaining a sponge in the vagina, he will with difficulty ascertain whether she be diseased or not. A narrow vulva may occasion an accumulation of the secretion in the posterior part of the vagina; large quantities of feculent matter in the rectum, or a full bladder, will tend to the same effect, and thus the discharge escapes only when the patient makes efforts to go to stool or pass urine.—W. A.

to the question of contagion, we would not like to affirm that the discharge would not produce contagion; we do not, however, think it complicated with a virulent principle, nor do we attribute it to impure connection.

" This disease which will last during the whole of the pregnancy, notwithstanding all our treatment, will disappear after confinement. We should likewise observe that we have seen simple vaginitis terminate at length in this variety of granular disease. According to the investigations we have made on the exact seat of these granulations, we think that they are nothing else than the papillæ of the vagina undergoing a kind of hypertrophy, and which may be compared to the papillæ of the tongue abnormally developed under particular circumstances.

" Vaginitis is not uncommon among young girls, depending as it does à des attouchemens réitérés, on impure connection, or on the orgasm which precedes the first menstruation. We observe it sometimes among the very young, so much so that we might believe the complaint to depend upon violence, or attempts at rape.* Surgeons are often called upon to examine young girls attacked with vaginitis, and whom it might be supposed had been violated. They are children of from six to seven years of age, generally of lymphatic or scrofulous constitutions, ill fed, badly clothed, contracting at a very early age the worst habits, which the *cynism* of their language reveals. Of the large number of little girls that we have been called on to examine, as having been the supposed victims of attempts on their virginity, we have found *very few* who have been treated so really. We could scarcely suppose that speculation had laid hold of this means among the lower classes, and that mothers had taught their children of ten years of age to play the part of victims, which they support before

* The profession is becoming every day more convinced that there are many of the affections of the female genito-urinary organs which resemble venereal blennorrhagia, but depend upon a complaint which has nothing to do with contagion. My friend Dr. Cormack has lately called the attention of the profession to cases of vaginitis depending upon scarlatina. His experience on this subject is so interesting that I shall quote his own words:—

" In the epidemic of 1848-'49, I had under my charge twenty-three female patients, all of whom were cleanly, well-nursed, and in a respectable social position. In twelve of the whole number there was well-marked vaginitis; and so impressed was I with the importance of averting or preventing this affection, that, in every female patient, I directed, from the very first, careful ablutions of the parts to be performed at least twice in twenty-four hours. Of the twenty-three female patients, two only were above fourteen years, and these were respectively twenty-six and twenty-eight, and both married. Now both of these patients had acute vaginitis, much more severe than any of the children. In one lady, for forty-eight hours, the discharge was so abundant as to require the nurse to change the towels at least every hour; and it was of so acrid a nature as to excoriate the thighs and anus, notwithstanding every precaution being taken to protect these parts. The other had it more mildly; but the vaginitis was also in her a source of great suffering and discomfort. The first lady aborted; the second was not in the family way. The first was the most dreadful case of scarlatina which I had ever seen issue in perfect recovery; the second was one of moderate severity.

" Speaking as I now do, from a very limited number of facts, I have no right to give an absolute opinion as to the frequency or rarity of scarlatinal vaginitis; but I would venture to suggest, that the non-observance of this affection by the practitioner is no proof of its absence; for patients suffering from scarlet fever are often too ill to make complaints; and, in other cases, the affection is managed by the nurse, without her thinking it necessary to trouble the doctor. The question must be decided by future experience of a large number of cases, carefully observed with a special view to its elucidation"—*London Journal of Medicine*, Sept., 1850, p. 872.

Dr. Barnes has also related a case highly important in a medico-legal point of view, in which a girl, aged sixteen, suffered from a muco-purulent discharge from the vagina, after the decline of the eruptive stage of scarlatina. He says: "There was evidence to show that this discharge did not exist at the time of the girl's admission, and that it was *first* observed at the period I have mentioned—viz, after the decline of the eruption, when she had been some days in the hospital.

" I believe that the discharge was not blennorrhagia, but a newly-observed feature in the pathology of scarlatina.

" It is in the suspicion of blennorrhagia, that lies the interest of this symptom in relation to forensic medicine. In this case, for example, an unmerited stigma might attach to the girl's character, were it not admitted that the discharge might be the result of scarlatinal vaginitis. Numerous other charges of a grave nature might be founded upon such an appearance. Accusations of rape even might receive corroborative proof from its presence. About two years ago, I saw a child of about eleven years old, who was recovering from scarlatina. It was then observed, for the first time, that she had a discharge from the vagina, and suspicions were immediately excited that she had been abused by a lad in the neighborhood. This discharge might have been a sequela of scarlatina."—*Medical Gazette*, July 12, 1850, p. 65.

magistrates, had we not been often witnesses of the fact. In children—whom we have been often called upon to examine by magistrates—we have always found the hymen perfect, and the vaginal orifice by no means dilated; but these parts were manifestly red and inflamed; sometimes excoriations were present. We have always satisfied ourselves upon the existence of green muco-pus, very abundant and thick, escaping out of the vagina, and which excoriates not only the vulva but the surrounding parts, even as high as the fold of the thigh; and all these parts may become the seat of more or less considerable swelling. Lastly, let us state that in a small portion of the children who have really been the subjects of criminal acts of violence, we have found disorders of the external genital organs, but the abundance of the pus flowing out of the vagina was less than in cases of children attacked with vaginitis which we could call scrofulous, and the cure of which is very difficult.

"We have found, in cases of young children who have been many times the subjects of attempts against their modesty, a depression of the perineum, so as to cause it to retract toward the posterior part of the vagina. We can likewise extend the same observation to young prostitutes, who have given themselves up to an early career of profligacy, and in whom this characteristic has been sufficiently preserved, so as to allow of recognition of the original cause.

"We admit two species of vaginitis:—

"*Simple Vaginitis*, succeeding irritating injections, excessive onanism, or connection—especially in young girls who have scarcely arrived at the age of puberty—and the introduction of foreign bodies into the vagina, &c.; and

"*Syphilitic Vaginitis*, coinciding most frequently with chancres and engorgement of the glands of the groin. We may observe that this last-named affection is less frequent than the former.

"Acute vaginitis, when accompanied with an abundant and acrid discharge, is often complicated with redness, which extends around the meatus and the nymphæ. The mucous membrane lining the vulva is not ulcerated, but has a shining, polished appearance, with here and there red spots, which at first sight might be taken for slight erosions. The mucous follicles placed on each side of the carunculae myrtiformes are equally inflamed, and secrete a yellow pus, which further increases the irritation of the parts. This state of things may remain in a stationary condition a long time, notwithstanding all the means we employ; and it is only after having cured the vaginitis that we observe these symptoms abate.

"**COMPLICATIONS.**—Vaginitis is complicated sometimes with urethritis, as we have already stated, and with inflammation of the whole of the pudendum. It is principally in girls under eighteen that vulvitis is observed. This last complication exists at least twenty times out of thirty. A complication still more severe, and which brings with it irreparable disorders in the genital organs, is the formation of abscess in the labia majora, an accident which it is almost always impossible to prevent, whenever irritation of the vulva or vagina is intense. It is in such cases that phagedena, produced by the inflammation which has extended from the mucous membrane lining the internal surface of the labia majora to the subjacent cellular tissue, comes on.

"Phlegmonous inflammation may attack both labia at once, or one only. During the occurrence of this complication, we constantly remark in the groin of the affected side swelling of one or more ganglia. These phlegmons, which we observe frequently at St. Lazarre, hurry through their periods with surprising rapidity, so that at the end of five or six days pus is already formed. If, then, we would avoid fistulæ communicating with the rectum, or which creep along the walls of the vagina, it will be necessary to put in practice the method of which we shall speak when treating of the complication of vaginitis.

"Bubo is a common complication of vaginitis. We may say, in a general

way, that swelling of the groin is the result of inflammation which has crept along the lymphatic vessels to the inguinal glands;* nevertheless, we have seen some which have been of a syphilitic nature, and which have presented all the characters of virulent ulcers.

"Vaginitis, in certain instances, becomes complicated with internal inflammation of the uterus; that is to say, the uterine mucous membrane may become inflamed, and then the patient experiences in the hypogastric region, in the groins, and the lower part of the back, pain, which at first is dull, but which soon becomes more acute. The neck of the uterus is sensitive to the touch; it is swollen and red; it has an increased feeling of heat to that when the vagina is alone affected.

"It is not uncommon to see, as a consequence of vaginitis, the os-uteri become the seat of a brownish redness; it may even ulcerate, as we have frequently remarked. The ulceration occupies the whole surface of the os, the epithelium is scarcely removed, but it presents a dark-red color; the surface is slightly granulated. The erosion produces very little or no discharge; sometimes there is an oozing of secretion.

"According to our statistics, we find the average duration of vaginitis in the acute state to be thirty-three days, and that when complicated with urethritis, ulcerations, chancres, &c., it varies from six weeks to two months; and, lastly, that chronic vaginitis lasts from thirty to forty days.

"A remark of the very first importance should be here introduced. We have stated, in speaking of urethritis, that discharges from the female become suddenly suppressed much more rarely than in men. It must be admitted that such is the case, inasmuch as we have never seen it occur at St. Lazarre during a number of years. Upon what does this depend?

"Let us remark, that as often as there is metastasis of a discharge to any joint, the cause which has produced the discharge is syphilitic.* And how could it be otherwise? Can we admit that a simple non-virulent discharge, which is the result of too great excitement, of irritating injections, may be suppressed, and give rise to metastasis? We think not, and do not believe that any such fact has been observed. But how can we explain this metastasis? Is it a simple coincidence between the suppression of the discharge and the swelling of the joint? We do not think so either. A general cause must be admitted, which, under certain conditions—and which our means of investigation are unable to appreciate—may à volonté shift about and establish itself elsewhere. We found our opinion on the fact that, in a large number of cases, a mercurial course, given with judgment, cures the affected joint without any necessity of recalling the discharge to its original seat. But if matters take this course generally, there are unfortunate exceptions; and, notwithstanding the return of the discharge, the complaint may continue to affect the joint, which at last may become the seat of a white-swelling. We must, then, believe that the virus, when it exists in the female, acting on a larger surface, does not shift about as readily as in the case of the male, and that it finds all the elements to terminate favorably without metastasis."—*Gazette Medicale de Paris*, vol. 1847, p. 576.

TREATMENT.—In acute blennorrhagia of the vagina, it is necessary to employ tepid or warm baths, and the greatest benefit will arise from fomentations or injections of warm water. The application of leeches to the groins will likewise be attended with the greatest benefit; but to insure the full effect, at least twelve or eighteen should be applied. General bleeding is rarely necessary; and poultices, or fomentations with warm flannels, should be persisted in, so as to encourage the oozing of blood. Laxatives, in this stage, are likewise of

* I can by no means agree with M. Boys de Leury in these statements, nor in that respecting syphilitic vaginitis, line 24, page 191.

great benefit; or a brisk purgative, such as jalap, may be given to unload the lower bowel. Aloes and colocynth should, however, not usually be prescribed. The greatest good, however, will be derived from

Injections: and as my friend Dr. Bennet, in his recent work on inflammation of the uterus, has given some most valuable hints on the best mode of employing these useful remedies, I shall quote them in full, agreeing as I do in the value he sets upon them as remedial agents.

"Vaginal injections, properly used, constitute a very valuable means of treatment in uterine disease. They may consist of water only, or of water containing in solution some medicinal substance.

"Water alone, as an injection to the vagina, is very beneficial. Its repeated use washes away the morbid secretions from the inflamed surface, and keeps the entire mucous membrane of the cervix and vagina in a clean and cool state. The vagina being a contractile canal—a kind of longitudinal sphincter—naturally closes on itself in its entire extent; thus embracing the uterine neck, as it were, by its upper portion. As a necessary result of this structural condition, when the neck of the uterus is inflamed, the mucus secreted, unless very abundant—which it is not in slight affections—stagnates round the cervix, where it is always found in greater or less quantity on the introduction of the speculum, and where it tends to keep up the irritation. This is, no doubt, one of the reasons why a slight inflammation—which on an exposed surface, or on one that could cleanse itself of the morbid secretion, would run through its phases in the course of a few days—is often perpetuated, and gives rise to ulceration.

"Cold water not only acts as a wash or lotion, but has a decided therapeutic effect. It is a powerful tonic and astringent, and may be used with great benefit when inflammation has been subdued, in order to give strength to the relaxed mucous membrane. When, however, it is employed with this view, a large quantity—two or three pints—should be injected once or twice in the twenty-four hours, so as to keep up a continued stream for several minutes. The water may be either quite cold or with the chill taken off, according to the time of the year, and to the external temperature. As a general rule, the colder the water is, the more decidedly are its tonic effects obtained.

"Medicated injections may be either emollient, anodyne, or astringent. The emollient injections I generally employ, are milk-and-water, linseed-tea, or the decoction of marshmallows, used tepid or cold. They frequently have a very soothing effect, and are principally useful when there is a considerable amount of irritation or inflammation about the vulva and vagina, which astringents do not allay, but even increase. The effects of the decoction of poppy-heads are the same, only it has a slight additional anodyne property. Plain water may be rendered anodyne by the addition of a few minims of laudanum, or of a dram or two of tincture of hyoscyamus. I seldom, however, resort to the vaginal injections of fluids containing opium, in order to allay uterine pain, as a much more powerful sedative result is obtained by their injection into the rectum.

"Astringent injections are most valuable remedies in the treatment of inflammation of the lower segment of the uterus, and of the vagina and vulva. Those which I principally employ, are sulphate of alum, sulphate of zinc, acetate of lead, solution of nitrate of silver, decoction of oak-bark, and solution of tannin. The first three I generally use in the proportion of a dram to a pint of water, increasing or diminishing the strength according to circumstances. After many experimental essays, I have arrived at the conclusion that alum is by far the most efficacious of all these agents, with the exception of nitrate of silver; and as it is the cheapest and most easily met with, I now seldom use any other in public practice. It is very rarely indeed that inflammation of the mu-

cous membrane of the vagina, even when of a blennorrhagic nature, resists its use, continued during two or three weeks, provided the injections be properly employed. I do not often employ the solution of nitrate of silver, owing to its having to be injected with a glass syringe, which can not be done without some risk of the latter breaking, and injuring the patient, and to its discoloring and destroying the linen which it touches. It is a very safe and energetic therapeutic agent; but as the same result can be obtained by alum and the other astringents which I have mentioned, I reserve it for exceptional cases. As a topical application to the vulva in various gradations of strength, when the seat of inflammation and of the irritation which so often accompanies it, the solution of nitrate of silver is invaluable.

"Injections, although of such great importance as a means of cleansing the vagina from all morbid secretions, of diminishing uterine irritation, and of removing vaginal and vulvar inflammation, are generally powerless to subdue confirmed inflammation of the substance of the cervix, or of the mucous membrane by which its cavity is lined. Their inefficiency in inflammation of the cervical cavity is partly owing to the fluid not reaching the region affected; in inflammation of the substance of the cervix, a remedy which is only applied to the surface can scarcely be expected to subdue the deep-seated disease.

Not only is it possible to treat successfully non-ulcerated inflammation of the cervix, when slight, and of recent date, merely by emollient and astringent injections, rest, and attention to general health, without having recourse to instrumental examination, or to means of treatment requiring instrumental interference, but even slight ulcerations, unaccompanied by general inflammatory hypertrophy, will sometimes give way under the influence of these means. In order to establish this fact, after ascertaining with the speculum the presence of a superficial ulceration, I have treated patients as described, without using any other local treatment to the ulcerated surface, and have occasionally found the inflammation diminish, and the ulceration decrease, and at last cicatrize.

"It is only, however, in cases of very slight ulceration, unaccompanied by general hypertrophy, that emollient and astringent injections succeed; and in these cases the treatment can not be depended upon. Even if successful, the recovery is so much more tedious than when cauterization of the ulcerated surface is resorted to, that I never feel authorized to recommend its adoption.

"Although, therefore, it is not impossible to cure the slighter forms of inflammation and ulceration of the uterine neck by vaginal injections, by rest, and by general medication, without the use of the speculum, it is very desirable that the attempt should not be made if the scruples of the patient can possibly be overcome. We must also bear in mind that however careful and minute the examination made with the finger may be, it can only enable us to form a *suspicere* as to the precise nature and extent of the disease; and that, consequently, when symptoms indicating disease are present, unless we bring the speculum to our assistance, we must treat our patient, in a great measure in the dark: Moreover, when once the speculum has been employed for the purpose of diagnosis, its further use, as a means of treatment, is not likely to meet with any obstacle on the part of the patient, and still less on that of her friends.

"In order to obtain the full benefit derivable from vaginal injections, they must be properly and efficiently used; and this is never the case unless the patient be previously instructed how to proceed. When a fluid is injected into the vagina, the patient being in a stooping position, not only does it at once escape from the parts, but it rarely reaches the cervix, or the upper part of the vagina. For this to be insured, she should lie horizontally on her back, on the bed, the sofa, or the floor, with the pelvis slightly elevated, so that the fluid may gravitate toward the internal structures. The natural contractility of the vagina expels the water, it is true, but not until it has well washed the entire

vagina. A small quantity of the injection often remains imprisoned, as it were, in the superior cul de sac of the vagina in the vicinity of the cervix, until the patient rises, when its own weight brings it away. To prevent the fluid, as it escapes, from moistening the dress of the patient, I generally advise a flat bedpan to be placed under the pelvis. It is by far the most effectual plan, although the female's own ingenuity will often find a substitute.

"This mode of using vaginal injections almost necessarily requires the assistance of a second person, which forms the great objection. If the difficulty can not be overcome, and the patient can not manage the injection herself, it must be used in any position which is found practicable. The therapeutic effects will not be so decided, but still a great amount of local benefit will be obtained.

"The best instrument for vaginal injections is a pump syringe, with a six-inch elastic vaginal tube, adapted to the longer tube, and presenting at its extremity four or six small holes, on the sides as well as at the end. The vaginal tube can, after introduction, be directed to the region of the vagina where the cervix lies, and *any* quantity of fluid can be injected without its being withdrawn. I seldom use less than a pint when the injection is a medicated one; and when it is merely water, I generally advise my patients to keep injecting for several minutes, irrespective of quantity. The ivory and metal syringes in general use are ridiculously small, and contain so little, that the effect produced on a large surface like the vagina must be insignificant, unless they are withdrawn and reintroduced many times. This, however, can not be done without occasioning great external pain and irritation; moreover these syringes have not the power to carry the fluid into the upper part of the vagina. It is owing entirely to the use of these inefficient syringes, and to no precaution being taken to insure the injection reaching the parts affected, that they have fallen into discredit with some practitioners, who assert that vaginal injections are of little use in the treatment of uterine inflammation. With the poorer class of patients who can not afford the expense of the pump syringe, I employ a large-sized metal syringe, with a long curved extremity, similar to the one known by instrument makers as Clarke's syringe.

"As injections are inefficient unless they reach the entire extent of the vaginal cavity, it is very important to ascertain whether such is the case, especially if their employment does not appear to be attended with the usual benefit. This can easily be ascertained by telling the patient to use an astringent injection—the aluminous one is the best for this purpose—an hour or two before the time of examination. Unless the vaginal secretion be most profuse, all that part of the vaginal cavity which the injection has reached will be contracted so as to admit with difficulty the introduction of the finger. If, however, it has only washed the lower part of the vagina, the finger, after passing the contracted region, finds the upper part moist and uncontracted.

"I scarcely ever recommend vaginal injections to be used oftener than twice in the twenty-four hours, except in blennorrhagic inflammation; and generally find, that in the course of one, two, or three weeks, the inflammation is so completely overcome that it is no longer necessary to employ them more than once in that period. When the injections are depended upon to assist in overcoming inflammation of the cervix, they may be continued twice a day, along with other more powerful and more efficacious means. In these cases, however, the injection is merely an adjuvant to the treatment, carrying away all morbid secretions, preventing congestion and inflammation from again extending to the vagina, and assisting the action of the remedies directed against the disease of the cervix."—*Bennet on Ulceration of the Uterus*, p. 377, 2d edition.

In addition, however, to the use of injections employed as above directed, the greatest benefit is to be derived from strong solution of nitrate of silver;

patients, however, seldom can employ them properly, and the manner in which they stain the linen is the great drawback to their use. It is under such circumstances that I now almost always have recourse to touching the walls of the vagina slightly with the solid stick of nitrate of silver, so as merely to whiten the surface. To do this the speculum must be introduced, warm water injections having been previously used to thoroughly remove the discharge, and the walls of the vagina should be further mopped out with dry lint; as the surgeon withdraws the speculum the parts should be slightly cauterized, and pieces of carded cotton, to which little pieces of thread should be attached, may be introduced, and then the lower parts of the vagina should be treated in the same way. The cotton has the additional advantage of soaking up the secretion and separating the folds of mucous membrane. Once that this cauterization has been performed, the cotton may be left twelve or eighteen hours, when it may be removed by drawing on the little threads, and astringent or warm water injections may be again had recourse to, taking the precaution of passing carded cotton as high up the vagina as possible. The cauterization may be repeated every other, or every second day, according to circumstances, with the same precautions spoken of above, and treated in this way, the results are very satisfactory.

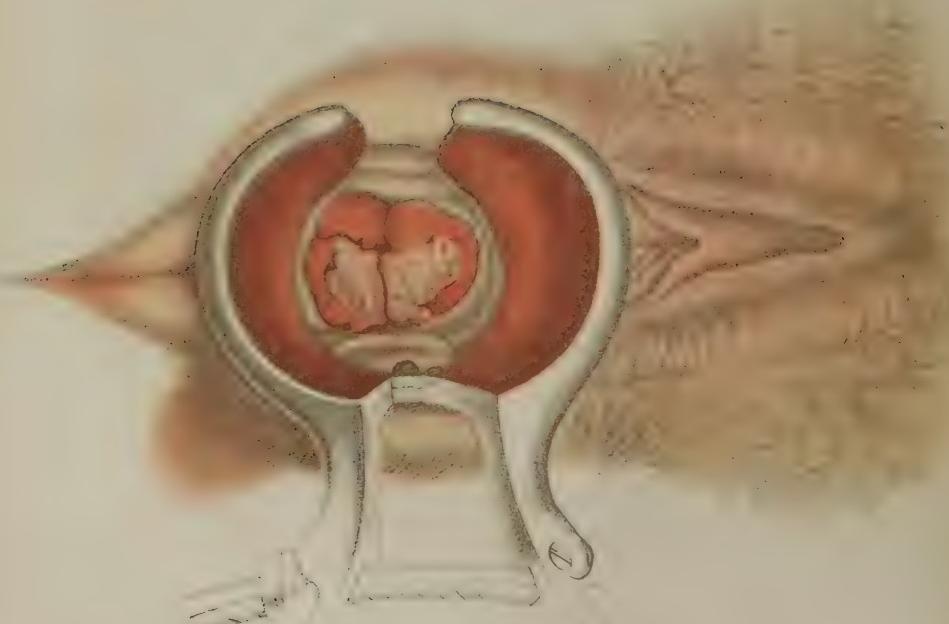
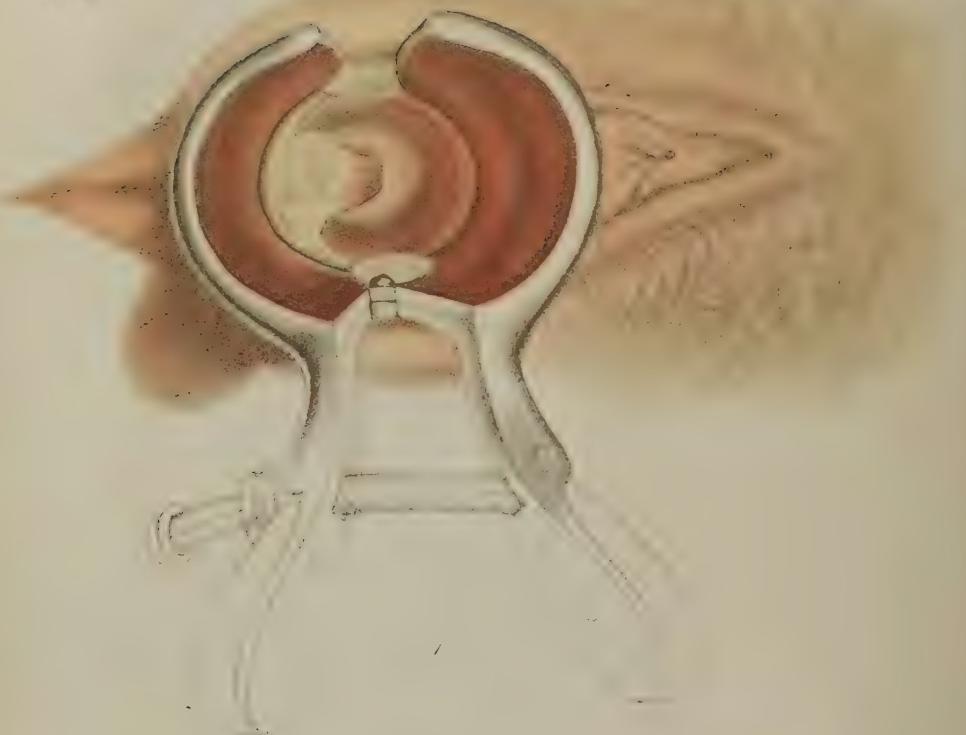
The general health must be attended to, but this will be more fully alluded to in the subsequent section, when the appropriate treatment of affections of the uterus will be spoken of. In vaginal inflammation, I have never seen cubeb or copaiba of the slightest good; the principal dependence must be placed on local treatment.

SECTION IV.

BLENNORRHAGIA OF THE UTERUS.

ACUTE inflammation of the uterus may extend from the vagina and affect the os-tincæ. It will be unnecessary here to allude further to the subject, as the complaint is but an extension of the inflammation of the vagina, and, as such, is attended with the same symptoms and treatment mentioned in the last section. But it is by no means necessary that the inflammation of the uterus follow as a consequence of the disease in the vagina; in many cases it commences at and is confined to the os-uteri, or, beginning at the os, may implicate the vagina, producing there the same appearances we have described.

NORMAL APPEARANCE OF THE OS-UTERI.—As the natural appearance of the os-uteri may not be familiar to many of my readers, I shall describe its character in the normal state. In healthy women, who have not had children, the introduction of the speculum brings into view the os-uteri, which is situated about four inches from the vulva. It presents a pointed, conical, nipple-like extremity, as large as the extremity of the ring-finger, which at once becomes engaged between the blades of the speculum. In the centre of this nipple-shaped extremity we observe the canal leading to the os-uteri. This should be small, not patulous, but lined with a mucous membrane, paler than that of the inside of the lips; highly polished when wiped, as there is always some natural secretion on its surface, and the mucous membrane appears strongly stretched over the fibrous, hard structure of the organ. There is no puckering of the edges of the canal, no puffiness of the lips, although in *primiparae* and in disease, we speak of the two lips of the os. If the mucous membrane is traced back, it is seen covering the base of the cone of this nipple-shaped projection, and the base may be as large as that portion of the thumb which joins



the hand. The length of the os thus seen in the vagina may be half an inch, and the color of the mucous membrane will not be quite so pale as that seen on the os. The direction of the os-uteri will be various when presenting itself between the blades of the speculum.

In healthy women who have had children or miscarried, the os-uteri presents a very different appearance. Generally speaking, its position is lower in the vagina. Instead of the conical, nipple-shaped projection of virgins, we have a shorter and thicker os; in fact, there may be scarcely any os-tincæ at all; the opening is an irregular chink, and the margin is more or less irregular, presenting two lips which are often puckered; the opening may be patulous, and the color of the mucous membrane redder, or purplish, instead of the pale pink seen in virgins. The secretion from the surface is greater likewise, and a clear, jelly-like mucus, which is found to be alkaline, is often seen exuding from the aperture. The quantity of secretion differs materially in different women. I had lately occasion to examine a female, in whom not the slightest trace of secretion could be seen, and the vagina was unnaturally dry; in others the reverse is observed: and yet both are consistent with a good state of health, provided the secretion is not of an opaque or whitish color. It is very necessary for the young surgeon to be aware of these different healthy conditions of the mucous membrane—otherwise he will be unable to detect the unhealthy appearances too often found in examinations; for I have more than once seen a healthy os-uteri condemned because the manipulator was unaware of what the natural condition of an organ so far removed from the eye ought to be.

PATHOLOGY.—Instrumental examination now enables us to show the changes which take place in consequence of blennorrhagia of the os-uteri. The whole surface of the os becomes of a dull, brick-red color, similar to that which occurs in blennorrhagia of the glans penis; the aperture in the os-tincæ is observed swollen, and the lips œdematosus; the sub-mucous cellular tissue is infiltrated, and you have puffiness and swelling of the whole. When the inflammation has existed for some time, you notice a granular condition, or they may present an excoriated appearance. In the more chronic forms we find ulcers of all sizes, varying from that of a horse-bean to that of a five-shilling piece. In some instances these are merely erosions, in others excavated ulcers are met with: but, as a general rule, ulcers on the os-uteri are superficial. Their surface is usually covered with a thick secretion, which is very tenacious, and must be wiped off before we can bring into view the ulcer. Beneath this secretion we may observe a granular condition, such as might lead a medical man to believe that cicatrization was about to take place; but if the case is watched, no such result will follow. In other instances the surface is covered with a white, chamois-leather looking secretion which can not be removed; in some cases we see unhealthy granulations which bleed under the slightest touch. The ulcers may occupy any portion of the os-uteri, but the posterior lip is the part most frequently attacked: in many cases both lips are covered with ulceration, which is observed creeping up into the uterus through the os-tincæ.* The shape of such ulcers is very irregular, but they are more or less round, and the distinction between the morbid structures and the healthy mucous membrane is very striking.

The cervix itself may be hypertrophied or indurated, and there may be retroversion or antroversion of its fundus; but these are changes not coming directly

* These lesions are now generally admitted to exist, as is proved by the concurrent testimony of Dr. Locock, Professor Murphy, Dr. Oldham, and Dr. Bennet, in London, Mr. Whitehead of Liverpool, Dr. Churchill in Dublin, and Dr. Simpson in Edinburgh; and doubtless in a few years the younger members of our profession will be astonished at learning that these lesions, which are now found to be so common since the more general employment of the speculum, should have been so long ignored.

under this section, and I must refer my readers to Dr. Bennet's valuable treatise for further information.

Now that these lesions have been discovered, acknowledged, and treated, differences of opinion have arisen as to their nature among those who have written on the subject. At first they were attributed to contagion, to syphilis, to venereal diseases, and we now often find these ulcerations stated to be syphilitic. I need not say that the description I have given of these ulcers in the preceding pages distinctly contradicts such assertions. On the contrary, I wish explicitly to lay it down that they depend upon inflammation, in many cases brought on by the same causes that produce ulceration elsewhere; in many instances, contagion, as in blennorrhagia, will produce inflammation, and that again will excite the lesions; in other cases it is abortion, or the many causes which have been alluded to in page 25, as the causes of blennorrhagia.

I again repeat, these lesions depend upon inflammation, and consist of simple ulcers, the result of acute or chronic inflammation of surfaces which readily take on the ulcerative processes, and in which there is but little tendency to heal. Many English writers, having at length met with the diseases (which I described eight years ago in the first edition of this work) in women of the town, have come to the conclusion that, as these unfortunate creatures often suffer from syphilis, the ulcers met with on the uterus have that origin. Now there can not be a greater error, or one which leads to greater mischief, as we shall prove directly we come to speak of treatment. During the time I was attached to the Female Venereal hospital in Paris, a great number of prostitutes, examined daily with the speculum, came under my care. A large majority of those suffering under ulceration of the uterus had never suffered from syphilis, and at the time of their examination presented no traces of lues venerea. In women who suffer from syphilis in its worst forms in all other parts of the body, the os-uteri is very seldom affected, and when affected it appears to be a coincidence, just as a patient with a varicose state of the legs or eczema of the skin may be attacked with syphilis; but these ulcers on the uterus are perfectly independent of syphilis in ninety-nine out of every hundred cases.

Not contented with these observations, I have inoculated the patients themselves with the matter coming from these sores, and the result has been, that the inoculated part healed as readily as any other cut. I have even applied a little blister to the skin, and when it had well risen, I have placed lint, soaked in the secretion, on the ulcer, and kept it applied for some time in contact with the blistered surface, which likewise healed without any difficulty. True syphilitic ulcers in the vagina and on the os-uteri are very uncommon. I have never met more than three or four that I could attribute to contagion of the syphilitic poison. As we shall hereafter see, syphilitic ulcers are generally situated at or about the external organs of generation in the female; the virus is then deposited on surfaces, which, in connection, may become abraded, and sores occur most abundantly; but, in the vagina, or on the os-uteri, the circumstances favoring contagion do not often occur, for if the contagious pus of chancre reaches as far, it is generally deposited on a layer of mucus, which protects the membrane beneath; and as the vagina yields readily to dilatation, no abrasion of its surface takes place; excoriations then can rarely occur there, and in practice they are seldom met with. I again repeat that ulcerations on the neck of the uterus are in ninety-nine times out of a hundred merely simple affections, the result of acute or chronic inflammation, very intractable to ordinary treatment, it must be acknowledged, and will persist an almost indefinite time unless we employ local applications. The last, and perhaps the most conclusive evidence, however, in the opinion of many, that these ulcers are not syphilitic, arises from the fact that they are met with in virgins, and in wo-

men who are beyond suspicion, in married persons who have never had syphilis, nor have the husbands; and the ulcers in no respect differ from the majority of those met with on the uterus of prostitutes: the causes may be different, but the results are the same: and those who would attempt to point out the distinction from the observations of a few supposed symptoms, will but lead the reader into error, and retard the progress of our knowledge of uterine affections.

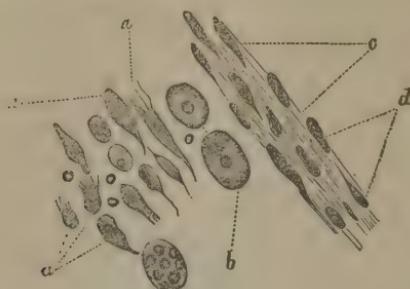
True syphilitic ulcers are of such rare occurrence amid the vast mass of simple ulcerations met with on the os-uteri, that they need not be looked for except on rare occasions. In the instances in which I have seen them, they differ from all other ulcers; they are small, covered with a chamois-leather secretion, which it is difficult to remove. Their edges are distinct; they look as if a portion of mucous membrane had been punched out of the os-uteri, and inoculation has shown that they were true chancres, situated on this unusual position. I have occasionally, likewise, seen ulcers on the vagina which I have had reason to believe were syphilitic, but the occurrence is so rare, that although in all doubtful cases they may be suspected, still they will be rarely found, and their existence there must be attributed rather to the secretions left in the vagina, or on sores about the external organs.

The necessity of making the above observations is the more apparent, as a modern writer on the uterus, Mr. Whitehead, has classed these affections, often met with in poor married women, as syphilitic constitutional symptoms. That gentleman, at page 372, says: "The local pathognomonic signs, to enumerate them in the order of their frequency, are—1. *Endo-cervicitis*, or inflammation to a greater or less extent of the lining membrane of the cervix-uteri, with inflammation, excoriation, or ulceration of the labia, around the uterine orifice (this appearance was noticed in nineteen out of twenty-eight cases)." Mr. Whitehead also considers a mottled and patchy appearance of the cervix, aphthæ, and warts, as evidence of syphilis, and he gives several cases in which these appearances were coupled with constitutional symptoms of syphilis. Now, in my opinion, after the careful perusal of these cases, there was no relation of cause and effect between syphilis and these appearances; the coexistence is not surprising, when we read that these poor creatures had been for years laboring under chronic discharges from the vagina. At the Islington dispensary; I could at any time have shown Mr. Whitehead numbers of poor women whose history is similar to that detailed in his pages. Some have had syphilis, it is true, but many have never suffered from the complaint; but in both I could have shown him ulcerations, aphthæ, and vegetations. Do I therefore conclude that these last are symptoms of syphilis? By no means: if syphilis exists, I say constitutional symptoms are complicated with chronic affections of the uterus, a complaint unfortunately too common among the lower classes of our town population, and which get well by local means, without having any recourse to mercury—a remedy that can not be sanctioned, as I shall presently show, in the treatment of these diseases.

THE DISCHARGES FROM THE OS-UTERI.—I can not conclude this part of the subject without adding a few words on the nature of the morbid discharges, which are very peculiar when they come from the os-uteri. The first object which strikes the eye, when introducing the speculum, is a large mass of opaque, tenacious, elastic, stringy mucus, blocking up the aperture of the ostium, and hanging down into the vagina. There may be more or less numerous globules of pus mixed with this mass. But this is by no means necessary, as shown in the woodcut on page 200. If, by means of a long pair of forceps, this tenacious mucus is seized and brought carefully away, it will be found to have been firmly adherent to the os-uteri, or rather to have been attached to the follicles within the os, and out of which it is drawn with difficulty by the for-

ceps ; it resembles to the naked eye that firm, tenacious secretion which passes from the nostrils when a cold is getting better.

Anxious to study its microscopical character, I obtained a good specimen from Mrs. L—, a patient then under my care, who had infected, with a serious-looking discharge, a young man under whose protection she was living. My friend Dr. J. W. Griffith, who has kindly seconded me on so many occasions, immediately submitted the specimen to the microscope, and the annexed wood-cut is a faithful representation of its microscopical characters.



Stringy Mucus from Os-Uteri.

a, Ciliated uterine epithelium; *b*, Pavement epithelium of vagina; *c*, Fibrous appearance; *d*, Younger state of epithelium.

Dr. Griffith thus further describes the appearances : " A colorless, tenacious, glairy mass. Contained neither pus-corpuscles nor granule cells. The tenacious matter itself was transparent and structureless, exhibiting mere scattered granules or points under the microscope. Embedded in it were numerous epithelial scales, many of them ciliated : the number of cilia varied. The scales were very granular, the nuclei few and faint. A few globules of fat, and the irregular fibrous appearance so frequently detected in mucus, comprise all the other objects contained in this substance."

When this fibrous, stringy mucus has been removed, the membrane may appear perfectly healthy, or rather paler than usual ; and the secretion comes not from the surface of the membrane, but is secreted by the follicles within the os-tincæ. This species of discharge is in fact an abnormal secretion of the glands of Naboth, which in health perform the part of blocking up the os-uteri with the firm plug when impregnation has taken place, and the existence of which during leucorrhœa is one among the many reasons of sterility. I have known several women become pregnant immediately this chronic discharge, which for years has been blocking up the orifice, has been cured ; its existence has apparently prevented the semen entering the uterus.

It may not be without interest, in a medico-legal point of view, to call attention to the diagnosis between this secretion of the os-uteri and that of the vagina or vulva, when the former has fallen on linen, or in cases where an examination with instruments is not permitted. When the secretion coming from within the os-uteri dries on linen, it leaves a roundish, massive stain, dissimilar to the more or less angular one found on the woman's shift when the secretion of the vagina falls upon it. In the former case the spot is, as it were, starched or firm, the color is of dirty-white or greenish hue, in this respect resembling vaginal discharge, but differing from it in its stiff feel. The microscopic characters of the two form also important aids—the vaginal epithelium being of the pavement kind, while the uterine is cylindrical, as shown in the preceding wood-cut.

CONTAGION.—Supposing a female labors under blennorrhagia of the uterus in one of the forms above mentioned, it by no means follows that she should communicate the complaint to her husband. Surgeons are often called upon to examine women who for years have suffered under affections of the uterus, without the husband having been contaminated. In such instances, the disease has been gradually coming on in the female, and the urethra in the male appears to accustom itself to the presence of the unhealthy secretions, which must come in contact with it. In these instances, however, connection may take place rarely, as the disease on the part of the female is but slight, and the exposure for the male is therefore seldom, and lasts but a short time, and there is little determination of blood to the female organs of generation, in consequence of the absence of venereal orgasm.

Men placed in such circumstances do not however always escape; husbands occasionally complain of slight discharge, or painful micturition, and other mild symptoms of gonorrhœa, which subside on abstaining from connection, and taking a little alterative medicine. At page 36, I have given an instance, in which a very opposite progress of the case ensued, and one of the most severe attacks I have ever treated, resulted in the husband, who, I am confident, like his wife, was a person to be depended upon.

In instances such as I have just described, minute inquiry teaches me, either that contagion took place about the time of menstruation, that after absence, venereal excesses took place that the female had been exerting herself to an unusual degree, or that the health of the husband had been greatly impaired by some accidental cause; in fact, through the occurrence of some such cause, the secretions had been rendered probably more acrid or purulent, or undergone some change which it is impossible in the present day to more clearly state, and of which we at present know nothing further, than that they present contagious properties.

Now, supposing a married woman does not communicate any affection to her husband, it by no means follows, that a second party who may have connection with her, escapes; many cases have come to my knowledge, in which the lover has been infected, the husband remaining intact; the explanation *may be*, however, found in the fact, that in the one case there is *empressement*, and frequent contact of the secretion, in the other, intercourse rarely takes place; besides, as I stated at page 30, habit, or as the French call it *acclimatement*, may have some share in the anomaly.

In a former part of this work, I have had occasion to remark, that in the majority of cases in which I have been consulted by men living constantly with women, and contracting discharges from them, contagion does not necessarily take place at once, but about a month or six weeks after cohabitation has been commenced and continued. Instead, then, of the urethra becoming habituated to the discharge, it might appear here as if the reverse occurred, but observation teaches us, that, in most of these cases, the female has been previously a continent person, though long suffering from some obscure uterine symptoms, and constant cohabitation has gradually set up subacute inflammation in an already diseased structure, and the secretions becoming more acrid, have caused the contagion. I have seen this result so often occur, that I entertain no doubt of the fact, that a female may not have been unfaithful to the man she is living with, and yet may produce discharge in him, and I consider the above as the explanation best adapted to all the cases in which it has occurred.

SYMPTOMS.—In vaginitis we found that the symptoms were generally of a local character; in affections of the os-uteri some pain is felt in the situation of the uterus, aggravated by connection, there may be much or little discharge of the stringy glairy character alluded to at page 200, as well as pain in the back and loins, shooting down the thighs; and all these symptoms are much increased

on exertion. You may notice all the functional diseases of the organs, as amenorrhœa, dysmenorrhœa, and the general health rarely escapes suffering materially. Thus we have indigestion in its most severe forms; we have the hollow, glassy eye, the drawn features, and many are the cases of invalids treated for general ill health, that only get worse under ordinary treatment, but as readily recover under appropriate treatment of affections of the uterus. I should, however, be too far digressing from my subject did I enter further upon these matters. The surgeon most frequently is called to these cases in consequence of the female who suffers from one of these affections having infected an individual. This is the occurrence which brings her to her medical man.

TREATMENT.—Before I commence speaking of the treatment of affections of the uterus, I feel called upon to make a few observations on the speculum, one of the most valuable means we at present possess for the diagnosis and treatment of diseases of the uterus, an instrument which has been incidentally alluded to in these pages, and a full description of which, together with its history, use, and means of employment, as well as some remarks on its introduction into this country, I have postponed, to be treated of in this section, in order that I might avoid repetition, and include what I have to say on the subject under one appropriate heading.

THE SPECULUM.

Historical Sketch of.—The antiquity of this instrument must be great when we find even mention made of it so early as the days of the emperor Domitian. The museum at Naples contains a bronze instrument, which in 1818, was dug out of the ruins of Pompeii, proving that our ancestors succeeded in bringing the os-uteri into view, and treating it with local and appropriate remedies.*

It was, however, re-invented in 1801, by Recamier of Paris, who treated ulcers of the uterus and vagina with topical applications like those of the throat by means of simple instruments, which have been successively improved upon until we arrive at the instrument which we shall describe a few pages further on. The speculum soon came to be extensively employed in the investigation of venereal diseases in the hospitals of Paris, and to my friend, M. Ricord, the greatest credit is due for having generalized its use for this purpose; society has reaped the greatest benefit from its employment, for without its aid we could not have arrived at that degree of certainty which we at present possess on the subject of venereal disease. Its introduction, even in Paris, in the treatment of prostitutes was not without its difficulties, and my late master attributes the female revolution which took place at his hospital, not to the dislike of the frail sisterhood to the indelicacy of the proceeding, but because the instrument brought into view lesions that his confrères did not detect, and which required, instead of a few days as formerly, a prolonged forced residence within the walls of the hospital. The instrument, in the French capital, is now so commonly employed, that while I had the care of the wards of the Ourcine hospital I was constantly in the habit of examining forty women in a morning, so readily is the operation done, and so tractable have the patients become, when convinced of its absolute necessity.

Soon after the encomiums passed on the instrument by Recamier, the speculum, like many other modern French improvements, was noticed in England; Dr. Balbirnie wrote a book on affections of the uterus, in which the use of the speculum was strongly urged upon the notice of the profession, but the instrument was seldom if ever employed, or even alluded to. Such was the state of things when in 1841, my first edition was published, entitled, "On Venereal Diseases and Certain Affections of the Uterus, attended with Discharges," in

* Vide Dr. Lee's Paper with copy of the instrument, Med. Chir. Transactions, vol. xxxiii., page 261.

which the attention of the profession was directed to the subject by an atlas of plates displaying these affections as they appeared in the selected cases taken from the patients under my care in the Ourcine hospital in Paris, and published immediately on my return. I am proud to say that the verdict of the profession has pronounced them to be most useful, as they acknowledged them to be the first of the kind published in either Paris or England ; and they still remain the only plates of the kind extant, as delineations of diseases which are becoming every day more and more known, particularly since public attention has been especially called to the subject by my friend, Dr. Bennet, in his valuable work on "Inflammation of the Uterus."

The following observations may not be uninteresting to the young enthusiast commencing his London career, and cheer him on in his path, if, like others, he should attempt in his turn to introduce into England any French improvement which he may believe is for the benefit of the fairer portion of his own community. Eight years ago, when my plates on the affections of the uterus first appeared, I was told by many of my professional brethren, that the diseases so vividly depicted there, *might* exist among the lower classes of French prostitutes, or even among the upper ranks of our neighbors, but no such diseases were noticed among our community. So little, apparently, was known about uterine diseases, that when even the heads of the profession saw these plates, they attributed them to contagion, and believed that they could only occur in the impure ; they coincided with the opinions of Sir Charles Clarke, and, like him, recommended injections and tonics, the true pathology of leucorrhœa was unknown to them, and they were content to go on in the same routine practice.

When I suggested an instrumental examination, it was amusing to see the look of pity depicted on their countenance at my proposing such a question, or believing that they could sanction such a thing ; some would by no means condescend to reason on the matter, others appealed to the feelings of the sex, and withdrew on the plea of not wishing to propose anything which could shock the delicacy of an English female ; and the patient hearing these statements, too often declined further consultation with the young surgeon who was said to propose a plan of treatment, not only indelicate but perfectly unnecessary. Another six months of useless lotion and drugs, unattended with the slightest relief, caused the patients, however, to think that prejudice might have something to do with decrying modern practice, and with the quick perception of a female, many returned and found that the instrumental examination was not such a painful process as had been stated, and that it was by no means unnecessary, inasmuch as in a few weeks they found themselves restored to a state of health they had not enjoyed for many years. As the number of cases of this sort increased, it was impossible any longer to meet with the contempt they formerly excited ; a new line of tactics began to be employed by these opponents of science. They now acknowledged to having occasionally employed the speculum, but objected to its indiscriminate use. They attempted to ridicule the treatment by giving currency to stories such as the following : "A West-end speculum-doctor (as he is called) examined one morning a mother, her eight daughters, and her cook ! pronounced them all to labor under inflammation, and accordingly cauterized the whole family *secundum artem*."—*Medical Times*, vol. xx., p. 459.

But nothing shows more forcibly the strength of prejudice excited by the introduction of the speculum into England, than the strong current of antipathy toward this mode of investigation, which has been lately manifested in a memorable discussion at the Royal Medical and Chirurgical Society, by some of those whom we have been heretofore taught to look up to as the great lights of the profession.

The general tenor of Dr. Lee's paper is to show that the employment of the

speculum, if it was not completely useless, was at least pernicious, in a diagnostic point of view. And he went so far as to deny the existence of ulceration of the os-uteri, the result of simple inflammation, and called in question the good faith of those who had advanced the opposite doctrine, as may be proved by reference to the paper.

"Neither in the living nor in the dead body have I ever seen ulceration of the os and cervix uteri, except of a *specific* character, and especially scrofulous and cancerous; but I have met with a very considerable number of cases in which it had been affirmed by others to exist during life, after deliberate and repeated examination by them with the speculum, where I ascertained that ulceration did not exist in the os and cervix uteri, nor disease of any kind.—*Dr. Lee's Paper, Med. Chir. Transactions*, vol xxxiii., p. 275.

Dr. Ashwell boldly stated that these lesions, independently of cancer, were only to be observed in twenty-five out of one thousand* cases.—See *Lancet* and *Medical Times*, June 8, 1850.

These assertions, we can not call them arguments, were peremptorily refuted by the head of the obstetric department, Dr. Locock, who reduced to nothing Dr. Ashwell's eloquent tirade upon the delicacy of English women, and asserted that these uterine lesions, which render an instrumental examination necessary, were very common.

The frequency of these lesions was, moreover, forcibly maintained by Professor Murphy, not to mention Dr. Bennet and myself, who again asserted what we had previously published.

This discussion was continued out of doors, in a certain number of very curious letters to be found in the *Lancet* of 1850.

An able physiologist (we were never before aware that he practised in the obstetric line) announced to the readers of the *Lancet* that the speculum had given rise to a new form of hysteria. Another physician, who is justly eminent as the author of an excellent work on uterine disease talked of the two thousand examinations as so many *immoralities*.

We are however happy to say, for the honor of the profession, that the supporters of such medical prejudices were few indeed, and that none of them ventured to accept my friend Dr. Bennet's repeated challenges to demonstrate the lesions we have spoken of, in any number they pleased of their own patients.

Public feeling, as expressed by letters in the "Medical Journals," has evidently run in favor of this important means of relieving the sufferings of women; and notwithstanding all the opposition that the speculum has met with, it follows as a natural consequence, to use the words of my friend Dr. Tilt, "that the obstetric physician is placed in the necessity of frequently making use of the speculum uteri in order to give precision to his diagnosis, and to cure his patient in the shortest time possible, which is the real end and aim of physic."

"The profession" adds Dr. Tilt, "would deeply regret that the painful necessity of employing the speculum, as frequently as it is now employed by all respectable practitioners who know how to use it, should force Dr. Ashwell, in accordance with his reported expression at the Royal Medical and Chirurgical Society, to retire from the practice of diseases of women—diseases on which he has already thrown so much light."

* The well-known author of "The Serpentine as it is, and as it ought to be," has, however, placed Dr. Ashwell on the horns of a very ugly dilemma, in the following playful manner:—

"The value of Dr. Ashwell's testimony is, however, considerably invalidated by the result of Dr. Oldham's more recent experience, which it appears is diametrically opposite to that of his distinguished predecessor. It is singular that there should be any difference of opinion between two equally talented men observing in the same field of inquiry. Does nature change her laws at Guy's when there is a change of obstetric physician? Is there any difference in the acuteness of vision, or the powers of observation of the two observers? How can we venture to pronounce on two such delicate points?"

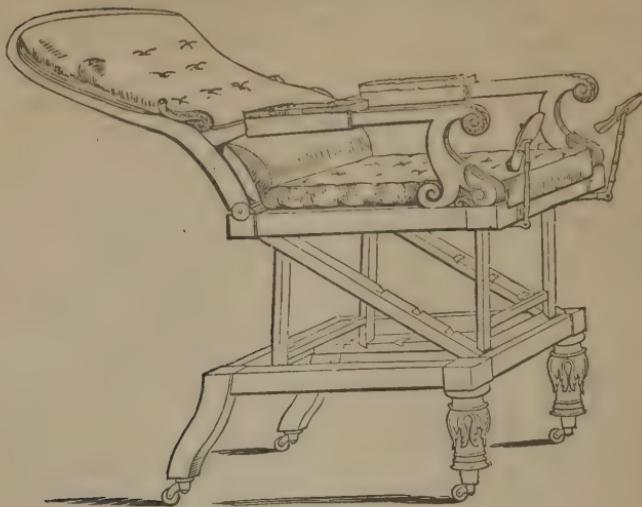
(Remarks on the late Discussion at the R. Med. and Chir. Society, by Dr. Tilt, *Lancet*, vol. ii., 1850, p. 173.)

"I can easily understand that a noble nature should aspire after a better world, where there may be no distinction of sexes, and where no obstetric physician will be required to meddle with delicate organs. But as long as there are *bonâ fide* women in this sublunary sphere, those organs which constitute them women must be assisted in their functions and ministered to in their diseases, and unless the medical attendant is himself indelicate-minded, there is, as Dr. Locock tersely remarked, no more indelicacy in doing so than in curing a sore throat by cauterizing the tonsils."*—*Lancet*, 1850, vol. ii., page 174.

Preparatory Steps for an Examination.—Let us suppose, then, that in a given case of vaginal or uterine affection the employment of the speculum is determined upon, the young surgeon commencing practice will naturally ask how he is to proceed to obtain the acquiescence of the female. The consulting surgeon in London finds no great difficulty; the patient comes to him aware that she has some obscure affection, or is brought by a gentleman who is anxious to ascertain the cause of her complaint; under these circumstances the obstetrician or surgeon does not find the same scruples to overcome, that may occur to gentlemen in general practice, and it is only necessary for him to state his inability without examination to arrive at a correct knowledge of the cause of the complaint, when acquiescence will be generally accorded. Many females understand an examination to mean one conducted with the finger, and it may be advisable to be at first content with this, which will of course teach the surgeon little more than the position of the os uteri or the existence of an ulcer or granular condition of the neck of the womb, and the patient may then be delicately told that an ulcer exists which it is impossible to reach without an instrument, and if she be a sensible person, and the examination conducted with natural and proper regard to her feelings—seeing the necessity, and a long sufferer without benefit from other means—she will submit with reluctance, which the surgeon may readily overcome by telling her that this necessary examination is as repugnant to his feelings as it can be to hers, but that no other course is left to him or to her should she be desirous of a cure. In a large class of women this preliminary examination with the finger is unnecessary, and I always avoid it if possible, particularly when I suspect contagion, and with firmness state that I can not give an opinion without an instrumental examination, employing, as M. Ricord says, no entreaties. In the cases I am now describing, the presence of a third party is not generally asked, but if it be suggested, I never refuse, and leave the choice to my patients. These are little matters which it may be necessary for the surgeon to be apprized of beforehand, and the observance of which will save him from much odium. When your patient consents, the examination had better be made at once, there is no good in delaying it; and, once done, your patient will submit a second time without more ado, particularly when made acquainted with the nature of her complaint.

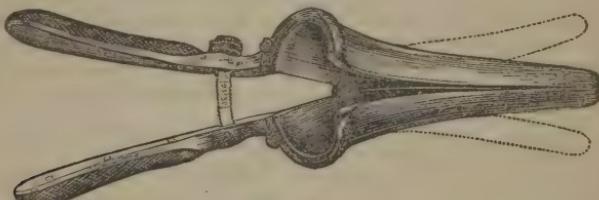
Mode of introducing the Speculum.—The less preparation made for the examination the better, and the patient may be requested to lie down on a sofa in a good light before a window, but in such a case the window must come down to the ground; if not the light will not generally be thrown into the speculum; and it is impossible to ascertain the condition of the structure you are about to examine. In the first examination, however, a surgeon need not be so particular in strictly viewing the whole course of the canal. In a case of consultation great accuracy is required, or if the patient has submitted to previous

* It may be a subject of regret to some persons, that I should have devoted the few preceding pages to a subject which (in their opinion) can only have an ephemeral interest. I would, however, reply, that hereafter this portion of my book may furnish matter for the collectors "of the curiosities of medical literature." In consulting the writings of my predecessors, I have had cause to regret the absence of these little episodes, which would have thrown light on the habits of the age in which they occurred, and proved that human nature is much the same in all climates and all times.



Speculum Chair.*

introduction of the instrument, it is far better for the surgeon to place his patient in a chair similar to the one figured in the above woodcut; the facility for using an instrument for a patient thus circumstanced is surprising; and persons having a large practice at their own houses must necessarily have some such contrivance, which when not in use has the appearance of an easy chair. This piece of furniture has the further advantage of serving as an excellent operating chair, and as such I can recommend it.



Bivalve Speculum.

The instrument I use consists, as may be seen in the foregoing woodcut, of two valves united at about the middle point, allowing both extremities to be widely separated; the narrowest part is thus placed at the vulva. To each valve a handle is attached, by which means space is gained, and the light falls upon the interior uninterruptedly, and pressure on them causes a dilatation of the two extremities, which can be maintained, diminished, or increased, by means of a screw. It has the further advantage of being adapted to the young and the old; one instrument serves alike for all, and the surgeon is not obliged to have a series, as happens when he employs the common speculum. Its employment is very simple, and is easily learned by a little practice.

The patient should be placed on the edge of the speculum chair, seen in the annexed woodcut, or on a bed, with a pillow under the head and shoulders, the thighs bent on the pelvis, and the legs on the thighs, the feet supported on

* Mr. Fergusson, the able instrument-maker in Giltspur street, will give the address of the maker, who has manufactured several under my direction.—W. A.

two chairs. What answers uncommonly well, and is to be found in most rooms, are the bed-steps, placed at the foot of the bed, and the patient sitting on the top, may lay back on the bed,* her feet supported on the third step.

The surgeon should place himself between the lower extremities of his patient, and requires no assistant,—an important thing in private practice. The speculum, previously warmed and greased with a white pomatum, may be introduced in the following manner;—holding the valves of the instrument firmly together with the right hand, the surgeon should separate the nymphæ by means of the index and ring fingers, while, by the aid of the middle finger of the left hand, he depresses the lower part of the vulva. This should be done gradually, but gently; at the same time the extremity of the speculum should be introduced into the vagina, the handles turned toward the left thigh; the side of one of the extremities of the valve should press upon the middle finger; the other valve will necessarily be applied against the posterior surface of the meatus, along which the surgeon must pass it by depressing the instrument, without tearing or excoriating the mucous membrane. Immediately the speculum has passed the ring of the vulva, it should be directed in the axis of the pelvis, and the operator should separate the valves; by this means he is enabled to see the condition of the vagina and uterus, and finally, the instrument will encircle the neck of that organ.

It is unnecessary for this purpose, to employ a very long instrument, neither is it desirable to push it on until the neck of the uterus is embraced, as this would expose the organ to laceration, and cause great suffering if the instrument should be caught in the *cul de sac* of the vagina, as often happens. To avoid this, I recommend the novice to ascertain the situation of the neck of the uterus by the previous introduction of the finger, so that the instrument may fall at once upon the cervix and the neck of the uterus will be recognised by the smooth condition of the mucous membrane, and by its color, which usually differs from that of the vagina. Useful indications for finding it may often be derived from the streaks of white of egg like mucus, which flow from the uterus into the vagina. In spite of these indications and precepts, should the surgeon find the speculum entangled in the *cul de sac* of the vagina, instead of pushing it onward, let him gradually withdraw the instrument, at the same time that the valves are separated and the neck of the uterus will at once come into view.

Although often called upon to employ the speculum in cases of various deformities of the osseous system in the Parisian hospitals, I never experienced any difficulty in introducing it in the manner above spoken of; and those who for the first time attempt to follow my recommendations, must bear in mind that patience and gentleness are very necessary in duly employing instrumental examination.

There are, however, certain counter-indications which should prevent the surgeon from introducing the instrument, at least for the moment.

These are: First, a severe inflammation of the vulva or vagina; second, the existence of the hymen, which the surgeon ought generally to respect; third, the narrowness of the vagina in very young girls; fourth, the occurrence of various bands of well-organized membranes, which are sometimes met with in women that have had children; fifth, the existence of menstruation, as it is then useless. The speculum may be employed, even though a woman be pregnant, provided the surgeon thinks the case urgent, and the instrument be introduced with care.

* Dr. Locock lately stated in the discussion above alluded to, at the Royal Medical and Chirurgical Society, that he is in the habit of placing the patient on her side, and that exposure of her person is never so great as when many surgical operations are performed, and that it can always be effected without hurting the feelings of the most sensitive-minded bystander; I am glad to cite his authority as overruling one of the most imposing arguments brought against the use of this valuable adjunct to our treatment.

When the speculum has brought into view the lesions alluded to at page 197, I remove thoroughly the secretions which cover the mucous membrane, by little mops made of lint, and at once touch the surfaces affected with the solid nitrate of silver, as already alluded to in speaking of vaginitis. When the irritation or inflammation extends into the os-tincæ, I pass the solid stick of nitrate of silver, as far as it will reach, up the patulous opening, leaving it there a sufficient time to dissolve, in the hope that the deliquescent salt will introduce itself into the lacunæ. I wait a few days to watch the result, and employ injections in the manner alluded to at page 193.

I have lately largely employed, with success, cylinders of potassa cum calce, as recommended by my friend Dr. Bennet, who thus describes them:—

"I now always substitute cylinders of potassa cum calce, which, with the assistance of Mr. Squire, of Oxford street, I have succeeded in obtaining similar to those of nitrate of silver in ordinary use. M. Filhos, of Paris, appears to have been the first who discovered, some ten or twelve years ago, that it was possible to fuse potassa and lime in variable proportions, and to run the preparation into solid lead tubes. Not finding M. Filhos's first tubes of fused potassa cum calce by any means as energetic or as efficacious as the Vienna paste or the hydrate of potassa, I long only used them for superficial cauterization. Some time ago, however, having received several from Paris which were much more powerful, the proportions of potassa being greater—two of potassa to one of lime—I requested Mr. Squire to fuse these substances for me in the above proportions, and to run them into soft metal tubes. The fluid potassa cum calce invariably melting the tubes, we determined to have iron moulds of various sizes made, and to run the potassa cum calce into these.

"I have thus obtained cylinders of potassa cum calce which can be used with the greatest ease, and with perfect freedom from risk, owing to their not fusing as pure potassa does, although quite as powerful in the effects they produce as is the latter substance itself. They are not free from a tendency to deliquesce, soon becoming spongy if left exposed to the atmosphere; but if applied to a dry or nearly dry surface, the action of the caustic does not extend beyond the surface touched.

"This action is not only as energetic, but also quite as prompt and quite as deep, as that of uncombined potassa. The cylinders may consequently be used without all the precautions which are absolutely requisite when Vienna paste or potassa fusa are used. All that is necessary is to see the cervix well isolated in the speculum, to wipe off the sanies that oozes from the surface cauterized, and then to apply a cotton peldorf, moistened with vinegar and water, which is to remain as a dressing on the withdrawal of the speculum. These precautions are necessary, as for two or three minutes after the application of the caustic, a straw-colored fluid exudes, especially if it has been carried into the cervical cavity, which may slightly cauterize the parts with which it comes in contact."—*Bennet on the Uterus*, p. 413.

I would recommend this caustic to be employed in preference to all others. In the first place (now that we can easily procure it), it is moulded into a cylinder, like nitrate of silver, and requires only the precaution of being kept in closed bottles, placed on a quill or caustic-holder; it is very manageable, burns deeply, but does not deliquesce like potassa fusa, yet makes as deep a cauterization, if that be desired. It is likewise much more manageable in this situation than Vienna paste, and, being hard, can be rubbed firmly against the affected part. The size of the moulds enables us to pass it up the canal of the uterus, and thus cauterize its walls; but before using this or any other application, the secretion must be carefully wiped away, and then the caustic may be applied, and a little practice will soon teach the surgeon how much of the substance is required, and, if it be necessary, to wipe away the corroded part, and

reapply the caustic. The pain felt will be trifling at the time, but hysterical symptoms, or haemorrhage, may come on during the next twenty-four hours—symptoms which may be readily controlled by rest in the horizontal position, and opiate enemata; and the young surgeon need not be alarmed at the results. The application of the caustic may be repeated at the end of four days or a week, depending on the size of the slough. In cases where there is great induration of the uterus, M. Jobert, of Paris, recommends the actual cautery: this plan, however, will never, I think, be employed in this country, nor is it necessary; but, in very obstinate cases, I should have no hesitation in following the plan recommended by M. Huguier, who introduces a peculiarly-shaped bistoury, and scores the os-uteri in eight or ten places, to the depth of one or two lines, his object being to destroy the deeper follicles, which secrete theropy mucus above spoken of at page 199, and then he cauterizes these scored surfaces freely with nitrate of silver. I have never had occasion to resort to such strong measures, but M. Huguier states that the patient suffers little, either at the time or afterward, and he has not observed metritis or peritonitis. From the impunity with which we may destroy large surfaces of the neck of the uterus, I am disposed to think that little reaction will follow, particularly if the operation is done between the menstrual periods.

In addition to the local means above spoken of, the general health must be attended to, and all causes that may possibly lead to aggravation of the symptoms must be carefully avoided. Great attention should be paid to the diet, and the large quantities of opium and stimulants which patients have been in the habit of taking, should be left off. Warm clothing should be enjoined, and regular exercise prescribed, together with change of air, and other hygienic means, which want of space will prevent my further particularizing.

SECTION V.

BLENNORRHAGIC AFFECTIONS OF THE OVARY.

IN the former edition of my work, I directed the attention of the profession to this complication. I stated that there is one complication which we believe is new to British practitioners; at least we do not remember having read of it in English works. We allude to an *ovaritis*, which bears an analogy to epididymitis in the male. Thus, a female suffering under uterine blennorrhagia may be seized with shivering and a feverish state of the system; vomiting may come on, together with pain referred to the iliac fossa, where more or less tension may be present (in no way resembling that superficial pain produced by peritonitis); but if the finger be carried up the *cul de sac* of the vagina, and the patient desired to turn upon the opposite side, pain of a most acute kind will be felt. The blennorrhagia may cease for the moment; one ovary may be attacked only, or both simultaneously, as in epididymitis: revulsion will explain the partial cessation of the discharge.

Lastly, we believe that a great number of ovarian dropsey may result from a chronic inflammation of that organ—the consequence of such complications.

Since the above was written, Dr. Bennet has read a paper on this complaint before the Medico-Chirurgical society, showing that the disease may occur as a consequence of simple inflammation of the uterus, to which I would refer my readers who are desirous of further information on the subject, as well as to the chapter on blennorrhagic ovaritis, in Dr. Tilt's valuable monograph on ovarian inflammation, page 71.

Blennorrhagic ovaritis in one or other of its forms or consequences is probably the disease to which allusion is made under the title—

“*De Colica Scortorum Disquisitio.* Autore Martino Hassing, Dr. Med., Medico Secundario Nosocomii et Legionis Civilis Havniensis, Regiae Societas Medicæ Havniensis Socio.; pp. 100. Havniæ: 1848.”

“This dissertation,” adds the editor, “contains the history of ninety-two cases treated in the hospital of Copenhagen. The patients were all prostitutes; and the author considers that the disease, under which they labored, originated almost entirely from the peculiar mode of life adopted by the class to which these persons belonged. He supports his views by some anatomical and physiological reasoning, and also by the fact, that some of the patients had repeatedly suffered from the disease while pursuing their avocations, while, on marrying and becoming orderly in their life and conduct, the complaint entirely left them. The affection appears, from the author's account, to differ in its symptoms little from ordinary colic; and it yields to ordinary remedies. It does not seem to be a fatal or even a very dangerous disease, as none of the patients died. The author is inclined to attribute it to the irritation of the sexual organs, and to the connection between those organs and the colon, through the medium of the sympathetic system. We hardly think that the author has succeeded in establishing the existence of a distinct form of disease; but we must do him the justice to say, that his thesis is written in classical language, that it offers a good example of medical reasoning, and that the treatment recommended is judicious.”—*London Journal of Medicine*, August, 1850, p. 756.

CHAPTER IV.

BLENNORRHAGIA COMMON TO BOTH SEXES.

THERE are two important sections under this division of my subject, namely blennorrhagic affections of the eye and gonorrhœal rheumatism, diseases which I shall successively describe, and which form most violent and obstinate complications, too often terminating in permanent lesions over which our art is powerless.

SECTION I.

BLENNORRHAGIC OPHTHALMIA.

THIS affection has generally been known in this country under the term, gonorrhœal ophthalmia; but I think my readers, after perusing this chapter, will agree with me that various affections have been confounded under the latter term; and this want of distinction has led many surgeons to vaunt certain remedies and treatment, which, although good in the one variety, are not applicable to the other. It is therefore of immense importance that my readers should be at once put in possession of the distinctions and varieties which modern experience has introduced; and to no one does the profession owe so much gratitude on this score, as to M. Ricord, whose experience I shall largely quote in the course of this section.

VARIETIES.—Under the term blennorrhagic ophthalmia there are two if not three affections in some respects closely resembling one another but differing

among themselves in many others. These differences are produced in part by the cause which may have occasioned them, and partly by the constitution of the patient in whom they occur.

The First Variety is that affection which has been truly enough called gonorrhœal ophthalmia, the result of direct contact of the secretion of the urethra coming in contact with the eye—producing those symptoms which we shall presently describe. For the reasons given at page 22, I shall in the following pages speak of the affection as blennorrhagic ophthalmia, the result of contagion, preferring that term to gonorrhœal ophthalmia.

The Second Variety consists of a nearly equally violent inflammation of the eyes as the last mentioned, coming on in persons laboring under blennorrhagia or gonorrhœa (as some will still call all acute discharges from the male and female organs of generation), but which can not be attributed to direct contact of pus from the urethra, and appears to depend upon the constitution of the patient; to metastasis, as it often occurs in rheumatic constitutions; or to a catarrhal influence. Some persons have called this a sympathetic affection; and M. Ricord, in his late lectures, speaks of three varieties: the contagious, the metastatic, and sympathetic. Admitting, as I do, the necessity of the young surgeon being aware that at least two severe affections of the eye may come on during the course of blennorrhagia, I think, at present at least, we are not in possession of sufficient data on which to found three varieties, I shall therefore describe the affection here spoken of under the terms—1. Blennorrhagic ophthalmia resulting from contagion. 2. Blennorrhagic ophthalmia from metastasis or catarrhal ophthalmia.

BLENNORRHAGIC OPHTHALMIA ARISING FROM CONTAGION.

M. Ricord says: "This is a very serious complaint, and one which must be treated with much energy."

"**CAUSES.**—Authors differ on the means of its production. Some have a decided opinion, others take a mixed view of the question; these last, I think, are correct.

"It has been said, and there are still those who advance the same opinion, that blennorrhagia of the eye is always the result of the direct application of the blennorrhagic pus to the eyes. I once participated in this opinion, but further experience has caused me to change these opinions. Let me recall to your recollection what I previously stated, that purulent ophthalmia follows only *urethral* blennorrhagia. It never accompanies balanitis, vulvitis, or inflammation of the uterus or its appendages. This is a curious fact, and one which has occupied much of our attention. We are well aware, nevertheless, that vaginitis, simple affection of the uterus, or vulvitis, may produce urethral blennorrhagia, which may itself produce blennorrhagic ophthalmia. We may say there is something special in the inflammation of the urethral mucous membrane. It has struck me as not a little remarkable that purulent blennorrhagic ophthalmia is infinitely less common in the female than in the male. It is likewise a well-known fact that blennorrhagia is infinitely less frequently found in the female than in the male. Thus two points are well established, viz., that blennorrhagic ophthalmia can be always traced to urethral blennorrhagia, and that this form of ophthalmia is much more common in males than in females.

"It is an incontestable fact that the discharge from an urethral blennorrhagia applied to the conjunctiva, produces an ophthalmia of the same nature. Persons have wished to contest the possibility of this means of production, by saying that the pus only touches the outside of the eyelids, and never reaches the globe of the eye. But a single point of this mucous membrane placed in contact with the discharge, suffices for propagating the disease. It is a very

common thing to carry the hand to the eye ; a patient is placed in a condition several times in the course of the day to handle the penis, and is therefore liable to have his hands soiled with discharge. The female has no necessity to touch the genital organs for the purpose of making water, and hence the less risk she runs of infection. Children at birth are very liable to ophthalmia ; in such cases the contagion is due to the contact of the puriform discharges from the uterus, vagina, or the irritating lochia. More recently, some authors admit for blennorrhagia only a general disposition acquired in virtue of the blennorrhagia. They have closely watched during the daytime the movements of the patients, they have enjoined the greatest attention to cleanliness ; but they have forgotten that contagion may occur as well by night as by day, and hence, the incompleteness of their observations ; independently of these instances, examples may be found, the cause of which can not be attributed to a general disposition.

" 1. A patient affected with blennorrhagia, became affected with double blennorrhagic ophthalmia, and lost the sight of both eyes. His brother, who slept with him, had at the same time a double ophthalmia of a similar kind, but he recovered the sight of both eyes ; in the last case the patient had no discharge from the urethra, and there must have been direct contagion.

" 2. A female made use of, for the purpose of washing her eyes, a solution of acetate of lead, in which her husband, affected with blennorrhagia, was in the habit of washing the penis ; her eyes became attacked with severe blennorrhagic ophthalmia. She presented no discharge from the genital organs.

" Vetch admits that the discharge taken from the urethra of a patient and applied to the eye of another, causes blennorrhagia, but he does not admit of self-contagion. He says, in order to effect this, he has seen the discharge from a patient's urethra placed on the eye of the same patient without any ill consequence occurring. Such an experiment proves nothing, as particular conditions of tissue and predisposition of the eye may be necessary in order to determine purulent ophthalmia. The moco-pus placed in contact with the mucous membrane of the urethra may likewise cause urethritis. This is so certainly the case, that some persons have believed that urethritis is the consequence of the Egyptian ophthalmia ; others have maintained that this disease is the effect of blennorrhagic ophthalmia, and that the disease extends from eye to eye. These two complaints resemble one another so closely that it is impossible to say which commenced the first. Thus we may assume, that according to observation, experience, and facts, there is a blennorrhagic ophthalmia the result of contagion.

" This variety occupies only one eye ; it may extend itself from one eye to another, the discharge from one side dropping into the other eye. It has seemed to us, in fact, that the other eye becomes attacked the more easily in proportion as the bridge of the nose is small ; on the other hand, we may assure ourselves that the patient lies always on the unaffected side in order to allay the suffering ; and in this position the moco-pus of the affected eye has a great tendency to run into the previously sound organ. Notwithstanding, in some instances, the opposite eye is affected sympathetically. It is not necessary for contagion, that blennorrhagia should have existed some days ; blennorrhagic ophthalmia may even precede it or exist alone. We have not always been able to trace the cause of purulent ophthalmia occurring in hospitals, and I am persuaded that it frequently recognises urethritis as its cause. Next to its being caused by contagion, persons have been desirous of admitting that blennorrhagic ophthalmia might be produced by emanations—by a species of aura blennorrhagica ; according to this opinion, the disease ought to be a very common one ; for if a blennorrhagic vapor exist, patients in an hospital specially devoted to the disease ought to be constantly under its influence, yet the complaint is a rare one.

"We will commence by studying that form of blennorrhagic ophthalmia which recognises contagion as its cause, be it self-contagion, or that resulting from the communication of contagion from one patient to another.

"There is no necessity that the blennorrhagia should have lasted any definite time in order that ophthalmia be developed; it possesses this property from the moment that the secretion becomes irritating.

"The muco-pus when secreted may produce the complaint in the eye, one or two days, or two or three months, after the commencement of the complaint. Let it be recollect that in accordance with our observations, it is the urethral muco-pus which causes this affection of the eye; this condition is indispensable, in order to produce that form of ophthalmia called metastatic.

"**SYMPTOMS.**—The variety of ophthalmia the result of contagion runs a very rapid course. It commences usually in one eye only; the other eye may subsequently be affected, either in consequence of the contact of the secretion of the affected eye, or by the means of the mechanism of metastasis. Some patients complain of a feeling of heat at the onset, others of a stinging sensation. There is neither fever nor pain in the head. Soon, however, they feel as if some portions of sand had entered between the globe of the eye and the conjunctiva; this last membrane becomes injected. At this stage the inflammation is circumscribed; it is situated most commonly on the conjunctiva, covering the lower lid. At first the secretion consists of mucus, then it becomes muco-purulent. In the early stage there is no secretion of any kind; but this period of dryness is so short that it may pass unperceived. Up to this time the eye is but partially implicated, later the entire organ is attacked; the mucous membrane is injected and red, presenting a brick-red hue; the inflammation now becomes very intense. Up to this time there has been no reaction, or there has been but slight supra-orbital pain. The secretion of the tears is most abundant; they gush out, and produce a scalding pain similar to that felt in micturition. The sub-mucous palpebral cellular tissue is speedily attacked. At first there is simple œdema, and then it takes on a phlegmonous character, just as happens in balanitis. The eyelid swells, becomes convex, of a red color, assuming an erysipelatous tint; it falls down by its own weight, enclosing the lower eyelid; the edge of the lower lid is thus pushed toward the globe of the eye. Trichiasis then occurs, which produces further inflammation of the organ.

"If the lower lid swells much, its edge is on a level with the upper one; in such a case there is no trichiasis, but, on the contrary, ectropium may result. Cases have been cited to show that the mucous membrane alone may become inflamed, the eyelashes being turned outward. These cases must be excessively rare, as I have never had an opportunity of observing them. The swelling and infiltration soon takes possession of the sub-mucous ocular cellular tissue. At first we meet with only simple œdema, followed, however, by phlegmonous œdema. Sometimes we observe a true phlegmon. The swollen mucous membrane forms a thick fold or rim round the cornea; this we call chemosis. In proportion as the disease gains ground, and as the phlegmonous disposition increases, it rarely happens but that the symptoms in the surrounding parts become aggravated. Pains in the head, of a more or less violent kind, declare themselves, and fever comes on; nevertheless the eye still supports the light. The other structures of the eye, however, do not always remain unaffected; the cornea now participates in the disease. The secretion almost always assumes the same characters as in blennorrhagia; at first of a clear yellow, it becomes darker, and then brownish; lastly, if the inflammation be very violent, it may become sanguinolent. It may be very thick, similar to that of phlegmonous erysipelas. We shall find further on, that particular indications relative to the prognosis have been attempted to be drawn from the na-

ture of the pus. The eyelids generally become immovable, the edges are glued together, and a complete cavity is thus formed, in which the tears and the secretion collects; thus the eye is constantly bathed with these irritating secretions. The blennorrhagic ophthalmia is more severe in proportion as the eyelid is small; just as in balanitis, the disease is violent in proportion as the preputial opening is narrow.

"Up to a certain point the patients preserve their sight. At the base of the swollen margin of the conjunctiva the brilliant and unaffected cornea is seen; but in a short time it becomes affected, after a resistance depending on a difference of tissue, the cornea loses its brilliancy, plastic effusion takes place between its layers, it becomes opaque, softened, and small purulent deposits take place within its substance. These little abscesses may open externally, or burst into the anterior chamber of the organ; perforation takes place, as a consequence, more or less complete, and larger or smaller, as the case may be, producing consequences depending on the size of the opening and loss of substance. In some cases the cornea is most rapidly destroyed, it seems to perish at once; this happens when the inflammation is very violent and the chemosis very severe. The inflamed portions undergo changes which it is very important to be acquainted with. The mucous membrane has at first an appearance like velvet; it then becomes granular. These granulations become larger and larger in proportion as the disease advances; but it is only in the latter stages of the complaint that the enormous granulations are seen. This form of ophthalmia may run through its phases, or destruction of the eye take place, and extend to the internal structures, in twenty-four or forty-eight hours, or the process may occupy five or six days; the rapidity will be greater if it follow contagion, and if one eye only is attacked. If the disease be allowed to proceed unchecked the loss of the eye is certain. The first favorable symptom of the disease consists in diminution of the swelling, and a creasing of the eyelids. The fever abates, the secretion diminishes, becoming more like pus; then it assumes the character of muco-pus, and lastly of mucus; the redness diminishes, the chemosis grows less and less, and the patient is able to open the lids. As the disease diminishes—if the inflammation proceeds from contagion—no relapse need be dreaded, as is often to be feared when the complaint arises from metastasis.

"**DIFFERENTIAL DIAGNOSIS.**—The principal means of diagnosis consists in the co-existence of the blennorrhagia, or the contagion from one individual to another. Apart from these two circumstances, there is no symptom which can distinguish this complaint from Egyptian ophthalmia, either in the aspect, nature of the secretion, in its course, or severity. Surgeons have attempted, by differential symptoms, to diagnose virulent from mild forms of ophthalmia. M. Herion has found in the former five auricular inflamed glands, but no such are found in blennorrhagic ophthalmia; and it is in vain to look for them in cases of severe inflammation. At the same time, we do not deny the possibility of the occurrence as a consequence of severe inflammation.

"**PROGNOSIS.**—This is always very serious. Lawrence has seen the eye lost nine times out of fourteen cases. During the time I was Dupuytren's interne I never saw that surgeon cure a single case; the eye was lost almost always. Since then, however, the results have altered; we cure as many eyes as we lose; but it is necessary to employ a very energetic treatment. It is absolutely necessary that the surgeon pay the greatest attention to his patient, and be constantly at his elbow; and with what satisfaction he must always view a man whose eyesight, on the point of being lost, he has been the means of saving!

"**TREATMENT, Local.**—When a surgeon is called on to treat this form of blennorrhagic ophthalmia, he should never forget the rapidity with which it goes

on to destroy the organ. The pause of a moment may deprive the patient of one of the most precious senses. The most perfect rest of the organ should be enjoined; every or any mental emotion may produce the most disastrous consequences. The patient's head should be raised, the chamber darkened, and a strict antiphlogistic regimen prescribed.

"Local remedies should at once be resorted to. The greatest dependence must be placed on the employment of the solid stick of nitrate of silver. It should be passed over the affected surfaces, so as to whiten and modify them, without any attempt to destroy the tissues. The eyelids should be everted, when this is possible; and commencing with the lower lid, in the manner above alluded to, the surface should be well syringed, so as to remove any trace of undissolved nitrate of silver, and the eyelid replaced. Some persons have recommended the anointing the cornea with oil previous to applying caustic, with the object of protecting that portion of the eye; this, however, is unnecessary when the eye is well syringed out. Should these directions not be fully carried out, the surgeon runs the risk of seeing the cornea affected by the salt. In cauterizing the lower lid, the surgeon may (provided the inflammation has passed beyond the oculo-palpebral edge) carry his caustic (*empieter*) on the mucous membrane covering the cornea. The same plan must be pursued with the upper lid. As soon as the first cauterization has been effected, the patient must not be left, but watched and examined as often as possible.

"The secretion for the moment is arrested; but the instant that the film formed by the nitrate of silver is detached, a secretion, at first clear and subsequently sero-sanguinolent, commences, just as we find follows injections of the urethra in the abortive treatment of gonorrhœa. As long as little whitened tufts exist on the surface of the membrane, consequences of the cauterization, and as long as the liquid secreted has not recommenced to be purulent, the good effects of the caustic are evident; but the moment these little tufts have disappeared, and the secretion resumed its former characters, we may infer that the effect of the former cauterization has ceased, and it is necessary to re-apply the nitrate of silver in the same way as before. The surgeon may re-apply it three times in the course of the day.

"When called on to treat children, or patients who have very small eyes, and if the surgeon fear to injure the eye, he may employ concentrated solutions of nitrate of silver. For this purpose we employ a camel-hair brush, and wash thoroughly out the organ, as in the former case. During the daytime the eye should be cleansed very often; without this precaution the surfaces will be bathed constantly with the secretions. Such cleansing requires the greatest nicety. The eyelids must be gently separated, and warm water carefully injected by means of a glass syringe.

"The eye should be fomented with poppy and mucilaginous fomentations; the pledges of lint should be light. Poultices should be avoided, for they have a tendency to draw the blood to the organ. Belladonna friction may be employed with advantage to the brow. Mercurials should never be employed in the early stages of catarrhal inflammation, for, independently of their antiphlogistic and resolutive action, they have a tendency to cause a flow of blood to the part, and may thus act injuriously in these cases, but in the latter stages mercurials may be of great use.

"If the blennorrhagic ophthalmia is complicated with chemosis, the surgeon should at once remove it while edematous; at a later period, when it has become phlegmonous, the mucous membrane is too tense, and can not be pinched up. The excision should be made with semi-circular-shaped forceps and curved scissors.

"The effect of this excision is so advantageous, that some surgeons (Samson) have had a tendency to employ it exclusively: it produces a local deple-

tion, the congestion disappears; but before excision cauterization should be employed, for the blood pouring out would prevent the action of the caustic. If the chemosis has already become phlegmonous, it is useless to attempt excision. The parts should be freely scarified, but the good effects are much less apparent than when excision has been employed. In the intervals between the cauterization with the nitrate of silver, we should not lay aside special remedies; we may employ daily three or four injections between the lids, containing solutions of nitrate of silver, in the proportion of half a dram of the salt to one dram of water. If the eyelids are edematous, they may be pricked with a lancet.

"General Treatment."—The local means above spoken of should be seconded by general treatment. If there be much reaction, repeated bleeding may be required; leeches may be employed along the course of the jugular vein, in the fossa canina, behind the ears, but always in sufficient quantities to allay irritation; a few only determine the blood to the part. Repeated applications of leeches, applied a few at a time, are found to be very serviceable, and there need be no fear of debilitating the patient. Saline purgatives may be added; these have the advantage of carrying off the serous portion of the blood through the intestinal canal. Mercurials only appear to cause injection of mucous membranes, and thus aggravate the complaint.

"Counter-Irritation."—Mustard-poultices may be applied to the feet, but mustard in foot-baths should be avoided, as the essential oil which escapes may increase the irritation of the eyes. Blisters, when properly applied, are of infinite benefit, but they are of most service when the inflammation is yielding. They should never be placed close to the affected part, but behind the neck, and sufficiently low to avoid the necessity of applying bands, or any means of constraint, which might tend to further increase the inflammation of the eye.

"The Treatment of the Discharge."—Surgeons who think the disease principally depends upon metastasis, have always attempted to recall the affection back to the urethra by re-inoculating the patient with the pus from the eye, or from some other patient: this is very dangerous, as it is possible to inoculate the patient with a chancre if another individual be chosen, for the surgeon can not say but what there may be a chancre in the urethra of another. Some surgeons have recalled the discharge by passing a catheter; it very rarely happens but that the discharge in the urethra diminishes in proportion as the eyes begin to be affected, but it never entirely ceases. These ideas are therefore erroneous, and re-inoculation need never be attempted. We employ the balsams, together with other means spoken of, but not with any intention of relieving the ophthalmia; for when the affection results from ophthalmia, contracted from another individual, we never make use of balsams. In attempting to cure the urethritis, we wish to remove one of the sources of the disease, and consequently diminish the chances of relapses. When all the above means have failed, and the perforation takes place, no special treatment need be required, but the affection must be treated as one of keratitis."—*Gazette des Hopitaux*, 1848; pp. 315, 335.

BLENNORRHAGIC OPHTHALMIA.

(SYMPATHETIC, METASTATIC, OR CATARRHAL.)

SYMPATHETIC VARIETY.—"When one eye is affected with the blennorrhagic affection, the result of direct contagion, the other organ may become affected without direct contact of the secretion, and independently of the general state of the system. We can easily conceive the possibility of this fact, inasmuch as a simple inflammation, without secretion of purulent matters affecting one

eye, is known to pass from one eye to the other, without our being able to call either metastasis, direct contagion, or a general condition of the system, to our aid, to explain the phenomenon. Do we not see these circumstances happen after the operation for cataract performed on one eye? Surgeons have admitted that sympathetic ophthalmia may follow urethral inflammation, a kind of distal sympathy in which the urethritis existing, it was impossible to call in question either metastasis or direct contagion. It is very difficult to understand this last sub-variety, and it is much more probable that these cases depended upon catarrhal or purulent ophthalmia occurring as coincidences. We might, moreover, admit that, under the influence of a general state of system, a purulent and catarrhal inflammatory affection developed itself at the same time in various mucous membranes, but particularly in the urethral and conjunctival membrane. We admit the possibility of this co-existence, without admitting that the local affections have the slightest dependence one on the other."

METASTATIC OR CATARRHAL VARIETY.—Some surgeons are believers only in metastasis; a large number of those who admit only this cause, admit likewise the identity of chancre and blennorrhagia. The observation of numerous instances induces me to believe that in persons liable to rheumatism (or even those who have never suffered from the complaint), ophthalmia may come on, particularly while a discharge exists in the urethra, which, *at its commencement*, differs in no other respect from cases of blennorrhagic ophthalmia than in the pus coming in contact with the conjunctiva—I repeat, which, *at its commencement*, it is impossible to distinguish. Still a surgeon may suspect such a rheumatic or catarrhal complication from a variety of circumstances, which it is needless here to allude to; but whatever his suspicions, let him watch the case carefully, but prepare the patient for the worst, for in a few hours the diagnosis will be quite clear: if purulent matter is not secreted in abundance, if chemosis does not occur, if inflammation is held in check by our ordinary remedies, we may then hope that the case will terminate most favorably, and I would not think of heroic remedies. No one more than myself can have greater reliance on nitrate of silver as a remedy in gonorrhœal ophthalmia, the result of contagion; but I am equally convinced that it is a pernicious agent in a rheumatic diathesis. The nice point, in cases like the one mentioned below, is to decide on what is to be your early treatment. In private practice, however, when we remember that rheumatic cases are common—that those depending on contagion are very rare—I would always try the simple plans first, and give the patient the chance of the disease being rheumatic, but let not the practitioner pause too long. If, on the contrary, the disease goes on unchecked, and he has reason to suspect that he is called on to treat a contagious case, with M. Ricord I would fearlessly use nitrate of silver: all modern experience points that way. In confirmed cases of severe purulent disease, ordinary remedies are at fault; and if nitrate of silver has not succeeded to the extent that it deserves, be assured a bad diagnosis has been made, and its abuse consists in employing the remedy in rheumatic and catarrhal cases. The recital of a well-marked instance of the latter variety may not be uninteresting to the reader, as it will give him a good sketch of the disease as we meet with it occasionally in practice:—

Gonorrhœa of five days' duration, treated by Copaiba, Paste, and Injections, followed by Irritation of the Neck of the Bladder, and Catarrhal or Metastatic Ophthalmia.

January 25, 1848.—A middle-aged, thin, spare, and irritable gentleman, called on me, suffering from gonorrhœa, which he had contracted in promiscuous connection, that dated twelve days back. The discharge had appeared five days, during which time he had allowed it to run on without treatment. At present

the scalding is slight ; the discharge rather abundant. I prescribed paste (see page 71), and injections (see page 64).

Observations.—I shall briefly allude to the treatment which immediately followed. The first injection was followed with pain, lasting three hours ; and this, on the second time the nitrate of silver was employed, lasted five hours, a most unusual occurrence. The tannin-and-zinc injection (see page 72) was subsequently used, and the paste continued. On February 5—that is, ten days after I first saw my patient—irritation of the neck of the bladder came on, without his having committed excess, or used unusual exercise, and he was treated on the plan laid down at page 150. On February 12—that is, a fortnight after this gentleman consulted me, and while the bladder was still affected, though in a less degree—the eye became affected ; and this brings me to the immediate description of the symptoms, which I shall give in full, as I find them in my note-book :—

Ten o'clock, A. M., February 12, 1848. Present Symptoms.—There is redness (I can only compare it to that of a dull, brick-red color) of both the upper and lower lids. The conjunctiva is somewhat injected, and at the inner canthus there is some swelling, and a feeling as if sand were in the eye ; some tendency to lachrymation, but little pain on exposure to light.

History.—The eye became affected last night, after reading by candle-light, and subsequent to a walk home in the cold. Thinks it not possible that he could have touched the eye with his finger after washing the penis.

Treatment.—Lotions of diacetate of lead.

One o'clock, P. M.—Little difference in the symptoms ; and not wishing to take the entire responsibility, the opinion of a distinguished oculist was taken.

Five o'clock, P. M.—Condition of eye : the caruncle red and puffy, conjunctiva red, the sclerota free from inflammation ; redness of lids less, and wrinkled, as if inflammation had subsided ; lachrymation slight ; secretion not purulent, as far as we could judge ; no pain ; light not affecting the eye, but pressure on ball giving some suffering, though uncertain where ; pulse irritable, easily compressible. Excluding the knowledge of the previous history, the case bore all the features of a catarrhal affection of the eye ; still, on the whole, it was considered advisable to treat the case as if it were gonorrhœal ophthalmia, and the following line of practice was pursued : The position to be the recumbent, the head raised ; rags wetted with the following lotion to be constantly applied to the affected eye :—

R. Alum.....	gr. xvij.
Liquor. opii. sedativ.	3 iss.
Aquaæ sambuci	3 vj.
M. ft. lot.	

The eye to be bathed three or four times during the night with the same lotion ; a shade to be worn over both eyes ; leeches were not thought necessary. A blister was ordered to be applied behind the ear, and zinc-ointment to be placed on the lids and cheek at bed-time, to prevent excoriation from the secretion.

The patient to take the following mixture :—

R. Potass. nitr.	3 ss.
Acid. nitr. dilut.	3 j.
Syr. aurant.	3 iij.
Tr. hyoscy.	3 ij.
Aquaæ puræ	3 v.
M. ft. mist. sumat. Coch. iij. magna ter die.	

The diet to consist of fish or broth, together with a little boiled mutton.

February 15.—To-day both eyes are equally affected. The inflammation came on in the hitherto sound organ the night before last; there is more pain than on the 12th; the conjunctiva of both eyes is equally affected; the secretion is not purulent, but more abundant; photophobia more considerable (though wearing a shade); little pain, no granular condition of the membrane. The blister only partially acted, and is now quite healed; bowels pretty regular, but blood passes by the rectum; discharge from urethra abundant; makes water frequently, and there is less tenesmus. To apply a blister behind each ear, and continue lotion and medicine.

February 16.—Blisters have risen well; conjunctiva still injected considerably; there are floating masses of lymph in the secretion, but no pus; no chemosis or granular condition; no pain; has continued as before the medicine. Blister dressed with savin cerate; pulse 100, irritable. To improve diet a little.

Feb. 17.—Amendment has commenced; pulse feeble; circulation in extremities languid. To take infusion of cascariilla and meat.

Feb. 21.—The redness of conjunctiva is now fast disappearing; pulse 80 to 100, irritable without power; blister nearly dry, although dressed with savin; there is still a small quantity of mucus in the urine; discharge from urethra is less, although some pain is felt in making water. To take quinine $2\frac{1}{4}$ gr. three times a day, with wine and water, but keep open blister; bowels regular; blood still passes by the rectum.

March 1.—The eyes were quite well yesterday (so he states), to-day the conjunctiva is a little injected; has been taking wine and water, but principally farinaceous food; no quinine; blister dry for three days; the urine deposites only a little mucus, but the calls to make it still frequent at times; chordee troublesome at night; discharge profuse. To take copaiba capsules and cascariilla mixture, to leave off wine, but to continue his meat.

March 10.—Has had a relapse in both eyes from working and going out too soon, but now well; discharge diminished; to employ tannin and zinc injections every day, and continue capsules.

March 25.—This patient states that he used the injection, which nearly cured the discharge, but it returned again; and on recurring to the injection it gave him so much pain that he discontinued its use, and he has not employed it for eight days; recommended him to take cubeb paste instead of capsules, to use the injection half the strength, and increase it; there is a good deal of discharge at present and chordee at night, with induration around the meatus.

April 25.—Went into the country on business soon after I saw him, when he had a relapse in his eye; got well by sedatives. The discharge is now nearly gone; relieved principally by baths, and I ordered him steel and aperient medicine occasionally.

I have lately met with two other cases differing little from the above, except that severe rheumatic symptoms accompanied the affection of the eyes in both instances, but the sight was recovered entirely under similar treatment; the discharge and rheumatism, however, lasted a long time, and were equally unaffected by treatment.

"CAUSES, PREDISPOSING AND EXCITING."—It is an indisputable fact," says M. Ricord, "that beyond the possibility of contagion, we find patients affected with ocular blennorrhagia following that of the urethra. It is not only after having placed our patients in a position rendering it impossible for them to infect their eyes by discharges from the genital organs, but after judging of the aspect and the means of producing this affection, that we have arrived at the belief in the metastasis.

"Blennorrhagic ophthalmia which appears without being caused by contagion, is most frequently related to or depends upon some rheumatic affection, nevertheless the rheumatic element is not necessary.

" Abernethy admitted an irritative state in order to explain the development; this is what we understand by metastasis. The origin of the term comes from the wandering character of the complaint; it oscillates, disappearing in one place to reappear in the other, and in this respect does it not resemble a rheumatic affection? Do we admit metastasis in rheumatism? In general it is young subjects, who have a lymphatic temperament and strumous diathesis, that we find disposed to rheumatism, and who are subject to pains about the joints; in fact, gouty subjects who enjoy this fatal predisposition. Surgeons have blamed the injudicious use of the balsams, and injections; but we must repeat here what we said in speaking of the epididymitis, that in the great majority of cases the patients affected with the complaint in question, have never used either one or the other substance; moreover, the complaint does not usually occur during the first few days; and lastly, the same patients present these same anomalous symptoms, namely, gout or rheumatism, every time they are attacked with urethral blennorrhagia. It is when the blennorrhagia is subsiding that this form of blennorrhagic ophthalmia commences. It is by no means necessary that the discharge be very profuse, that it be contagious or irritating; simple gleet suffices for the purpose.

" It has been only occasionally remarked, although it is an important observation, that in this variety both eyes are most frequently affected, either at the same moment, one after the other, or alternately one and then the other. What shall we say of the characters that surgeons have given to distinguish ocular blennorrhagia from Egyptian ophthalmia? It has been said, that in the former case one eye only is attacked, and in the latter, that both eyes may become implicated. We have already stated that most frequently in contagious ophthalmia one eye only is affected.

" DURATION OF THE DISEASE.—It is much greater in this variety than in the form resulting from contagion; it is very liable to relapse; it may leap from one to the other organ, as we noticed in speaking of epididymitis; very frequently it is preceded, followed, or accompanied with affection of one or more joints, and the larger or smallest articulations may be implicated. We frequently observe a sort of intermittence between the gleet and the affection of the eye. The three complaints, blennorrhagic ophthalmia, urethritis, and affection of the joints, may all exist at the same time.

" SYMPTOMS.—When the morbid agent acts on the entire mucous membranes, we may meet with all the symptoms as described under the head of ophthalmia, a consequence of contagion. In the commencement it is very difficult to distinguish the two varieties; very frequently the iris may become implicated, and some authors have thought fit to assimilate this complication with iritis the result of syphilitic infection; but we find in this form of iritis coming on during this variety of blennorrhagic ophthalmia, analogous characters to that met with in rheumatic affections, and styled rheumatic iritis.

" Under such circumstances the sclerotic vessels of the eye appear injected, the globe becomes tense and painful, the suffering is deep-seated. In addition to these phenomena, a particular state of the interior of the eye is superadded, a change in the color of the cornea takes place, depending on inflammation of the membrane which lines the posterior surface of the cornea; it becomes, in fact, *opaline*. The membrane lining the iris loses no time in taking on the same aspect; the secretion of the aqueous humor augments, and a true hydrocephalma succeeds; the patients complain of photophobia, and if the inflammatory state gains ground, true photophobia results. The secretion of the tears increases, effusion of albuminous matter takes place into the anterior chamber, followed by albuminous deposites.

" Let me remark, that there is but slight tendency to suppuration, just as occurs in rheumatic affections. The inflammation of the membrane of the

aqueous humor may, in fact, be likened to inflammation of the synovial membrane of the articulations. Notwithstanding this, inflammation of the iris may produce severe accidents, contraction of the pupil may result which may permanently distort the organ, depending upon attachment of the free edges of the iris by pseudo-membranous secretion, and cataract may result. Most frequently the affection commences by a catarrhal affection of the mucous membrane of the eye, and extends to the iris. In some instances the iris is first attacked.

"**PROGNOSIS.**—This form of catarrhal and rheumatic ophthalmia, if not recognised, may become exceedingly severe; but when its symptoms are well understood, and treated at the commencement, it presents a much less unfavorable prognosis than that affection of the eye the result of direct contagion. The entire loss of the organ, and the suppuration of the eye itself, is much less to be dreaded.

"**TREATMENT.**—In cases where the affection depends upon the rheumatic element, or where the aqueous humor becomes the seat of a plastic secretion, and the contents of the chambers of the eye become turbid, we should have recourse to the antiphlogistic remedies spoken of under the head of treatment of contagious blennorrhagic ophthalmia, and great attention should be paid in combating the photophobia, and photopsia, and all proper means should be employed in destroying the plastic tendency of the inflammation. Belladonna frictions and belladonna given internally, are attended with very good results. Mercury may now be used, and, when carried even to salivation, has the happiest effect in destroying the plastic tendency; it is always indicated in such cases. Colchicum, blisters, and other means, which are detailed under the head of gonorrhœal rheumatism, may be now employed with advantage."

—*Gazette des Hopitaux*, 1848, p. 337.

SECTION II.

GONORRHEAL RHEUMATISM.

In the last edition of this work, rheumatism was only incidentally touched upon, as I had great doubts whether there was a direct relation between this affection and blennorrhagia. Private practice has, however, convinced me that there is a very strong connection between them, and to a full consideration of the subject I shall now direct the reader's attention.

CAUSES.—Predisposition and hereditary tendency to gout and rheumatism have, doubtless, a very considerable effect in inducing the latter affection, when a person is suffering under gonorrhœa. Explain it as we will, the fact is undoubted. I have already cited a well-marked instance at page 36, and I could add others if necessary; but predisposition and the occurrence of gonorrhœa alone seem generally insufficient. The concurrence of cold and a lymphatic temperament are undoubtedly adjuvants. Rheumatism, particularly the gonorrhœal form, is much more common in a chilly, moist climate like ours, than in the dry, warm south; but here science and observation desert us. The relation between the two complaints admits of no explanation. Persons have asserted that rheumatism was caused by the discharge being driven into the system. The error of this opinion has been already dwelt on; and it has been shown that rheumatism comes on in some persons before any treatment has been employed against the gonorrhœa. I cited, at page 36, the case of a patient who hurried off to me the moment he had contracted gonorrhœa, fully and practically convinced that if the gonorrhœa was not at once cut short, he would inevitably suffer from rheumatism, which would affect him for many months.

The opinion that curing a discharge produces rheumatism is another popular error; for although it may be often true that an acute attack of rheumatism causes a *diminution* in the discharge, the running usually returns, and presents one of the obstinate features of the complaint. For one case of rheumatism coming on where the discharge has recently or suddenly ceased, we find ten where it remains in *statu quo*, invincible to all our specific means of treatment.

It would almost appear as if rheumatism enters the system by the urethra. The case cited at page 36 would lead one to think that the secretion of the uterus, coming in contact with the urethra, did introduce itself as a foreign poisonous substance, and induced a severe attack of rheumatism. But those who have seen rheumatism coming on after the passage of sounds and lithotriptic instruments, know that foreign purulent matter is not necessary. It is only requisite to set up an inflammation of the urethra, and you find rheumatism presenting itself, not in all cases, but in many persons who are previously predisposed to it by hereditary tendency. The following case illustrates this particular:—

A thin, spare man had long suffered under a discharge and a very tight stricture situated at the membranous portion of the urethra: the bougie was introduced, and the case went on well for some days, when fever supervened, orchitis came on, and seemed to affect principally the fibrous coverings of the testis. While recovering from this attack, rheumatism settled in the knee-joints, and the synovial membranes were successively filled with fluid. The disease, on abating in the joints, fixed itself in the intercostal muscles, and much alarm was felt for the pericardium, but this escaped. Finally the sclerotic coat of the eye became affected, and iritis followed.

We must not, then, view the subject in a narrow-minded aspect. Isolated cases prove little; and, in common with all who have written conscientiously on the subject, we must admit our ignorance of the laws of this protean disease. But although difficult to understand, we should by no means hesitate to observe it accurately, in the hope that on some future day light may be thrown on the cause, for at present we know of no relation between the urethra or the elbow, the ankle or the mucous membrane. We are compelled to say, that in gonorrhœa the system is so modified as to become affected by rheumatism.

SYMPTOMS AND CAUSE OF THE COMPLAINT.—Although doubts may exist upon its cause, the patient who is attacked with the complaint can not mistake the symptoms, which differ from acute rheumatism in not usually presenting the same acute inflammatory character. There is, on the contrary, little general febrile disturbance or severe local inflammatory symptoms, and little tendency to metastasis occurs. Most frequently one joint is attacked at a time, and the disease, having taken possession of it, appears disinclined to leave it or attack other joints. This has been considered pathognomonic of gonorrhœal rheumatism, but it is not always the case, as I have seen many exceptions to a rule which is generally correct.

In gonorrhœal rheumatism there is a great tendency to effusion, but suppuration rarely occurs, and the complaint assumes a lingering, chronic form, which wears down a patient, and gives the greatest annoyance to the medical attendant. Hence the prognosis must be always guarded. Life is seldom in danger; but the patient should be told that a speedy cure can not be expected, and relapses will frequently recur. A patient gets better, nearly well, a change takes place in the weather, and all the symptoms return with redoubled severity, particularly in our climate, which during the last twelve months has given the profession ample opportunities of studying the rebellious character of the disease.

PATHOLOGY.—In the commencement, gonorrhœal rheumatism has been supposed to attack the muscular structures, but great doubt may be entertained

whether, even in the early stages, the fibrous tissues are not primarily attacked, and the pain does not result from the muscles being inserted in these fibrous tissues, and hence the aggravated suffering when any movements are required.* At a later period, all are agreed that it is the fibrous tissues which are affected, and they become complicated with affections of the mucous and synovial membrane, or there is a new extension of the inflammation to these structures, which ultimately become severely compromised. Thus the joint, the eye, the testes, and bladder, may suffer severely, as has been shown in speaking of these different organs, particularly in certain constitutions predisposed to the disease. There is but little predisposition to attacks of pericarditis in gonorrhœal rheumatism, but pain in the intercostal muscles is not uncommon.

TREATMENT.—It is well for the surgeon that other diseases do not present the same obstinacy to his therapeutic agents. In gonorrhœal rheumatism much can be done to relieve symptoms, but little can be effected in quickly removing the disease. Let the young surgeon bear this in mind, and in doing so he will have attained much toward a knowledge of the treatment, which consists in taking care that the patient's forces should be husbanded. In the early stages, vapor baths and douches are of benefit when the muscular structures mostly suffer; in the later stages I have not seen any benefit derived, although my patients have been steamed and douched by the masters in the art: in fact, they do not derive even temporary alleviation of the symptoms when in the bath. Purgatives seem to act best, particularly when continued for a long time: colchicum, Dover's powders, calomel, nitrate of potash, hydriodate of potash, cod-liver oil, may be tried, and may effect great good, according to the indications present, and which it is not possible to describe, but they will in turn all fail. The greatest benefit will then be derived from tonics, given for some time, but changed as the one or the other appears to disagree.

The best local treatment is a laudanum or camphor poultice applied to the part, or warm-water dressings with belladonna. In other cases, the greatest benefit will be derived from enveloping the joint with blisters, and subsequently compressing the joint with strips of adhesive plaster and a roller. Rubbing the parts with the flesh-brush, or frictions with flannel and mustard, will produce much alleviation of the pain.

I can not quit the treatment of gonorrhœal rheumatism without alluding to hydropathy as applied to this complaint. Finding it so rebellious to treatment, several of my patients, hoping that they would be benefited, have resorted to the different establishments in the country where the principles of the treatment are carried out to their fullest extent by educated medical men; and as these lines may save many a useless journey, I shall state the results.

My patients report, that on their first arrival at these institutions, they are candidly told that, in the most obstinate cases, prospect of relief can not be held forth to them—that alleviation is all that they must expect for a length of time. In spite of this, the most sanguine have remained six weeks, sparing neither money nor trouble: they have had the wet sheet and the dry rubbing, the sitz-bath, the glass of cold water, and exercise in the finest air; have returned to town, wearing wet clothes all day on the affected limb, covered with a mackintosh, as well as a second wet towel around their waists; have strictly attended to regimen, but all to no purpose: and my own conclusions now are, that

* Brodie describes several interesting cases of affections of the joints, attended with discharge from the urethra, under his first chapter, headed "On Inflammation of the Synovial Membrane," from which we may infer that this able surgeon believes that the disease commences in the synovial membrane. That this often happens, no one can doubt; but in many others there is no symptom of effusion, the disease, as stated above, being confined to the fibrous tissues. I would recommend the perusal of the cases to my readers, as bearing out many of the points noticed in this article. Thus we find relapses very common; we likewise learn that affections of the eye attended these rheumatic attacks, which seemed to yield rather to time than to treatment.—*Brodie on Diseases of the Joints*, p. 52, third edition.

the only remedy for gonorrhœal rheumatism in its severe form is a residence in a warm climate. Those who are able to follow this advice, rapidly get well, but a London surgeon finds many whose occupation does not permit this absence from business: such patients, I fear, must suffer from a useless limb, or impaired joint, until time alone effects a cure, as the complaint has a tendency to wear itself out, particularly in careful persons, who attend to their diet, and clothe themselves very warmly.

SECTION III.

BLENNORRHAGIA OF THE ANUS.

THIS form of the complaint is a very rare one, still the surgeon is occasionally called upon to treat it: not, however, so often as some might suppose, judging from various discharges which may make their exit from the gut, and which may often be confounded with it. The symptoms and treatment I shall, however, describe from cases that have occurred, in which no doubt can arise that contagion has had its source in unnatural intercourse, as the parties were taken in *flagrante delicto*, or the patients have acknowledged that such has been the origin of the complaint; and a true interpretation of the symptoms is very necessary in medico-legal inquiries.

SYMPTOMS.—Pain and difficulty in going to stool usually accompany the disease: however, such symptoms exist equally in haemorrhoids and other affections of the rectum; a discharge from the gut takes place, resembling that from the urethra, and this, if it has been neglected, excoriates the whole of the surrounding parts, which become intensely painful, particularly when the patient goes to stool. The lesions of the intestines may be similar to those we described in speaking of the vagina, and the pain is very often intense in consequence of the faecal matter passing over the excoriated and inflamed gut, thus forming a severe complication; chancres may occur, which, if accompanied, as they sometimes are, by a spasmodic action of the intestine, render defecation very difficult, or even impossible.

The disease may assume either a chronic or acute character. When acute, the circumstances and complications render it very severe; when it takes on the chronic form, the position and difficulty of local treatment render the cure very tedious. *Buboës* seldom follow, but abscess at the margin of the anus is not unfrequent; it does not, however, necessarily form a communication with the intestine, though fissures of the rectum may frequently result.

The affection is usually seated just within the sphincter, and does not extend beyond the second curvature of the rectum.

The Cause is, as we have stated above, the effect of direct contact of the blennorrhagic secretion: it can not be produced by swallowing the secretion, as some authors have pretended. The other general causes of blennorrhagia might give rise to the disease, but seldom do so.

DIAGNOSIS.—This is by no means easy, for we occasionally see blennorrhoid discharges from the rectum, and to distinguish such from blennorrhagia is usually impossible. Previous writers have stated that there are certain appearances of the rectum which betoken the fact that unnatural crimes have been committed. As medical men, when placed in a witness-box, may be cross-examined severely on these matters, it may be necessary here to allude to the subject, particularly as the liberty and reputation of several individuals may depend upon a correct appreciation of the signs in question.

Thus M. Cullerier, one of the surgeons of the Venereal hospital, states, in an

article he has written on this subject, that an opinion may be formed from the funnel-shaped appearance of the rectum. In a case which I lately saw, it was satisfactorily proved that this funnel-shaped appearance of the anus does not necessarily follow the commission of an unnatural crime : no such appearance was there present.

In another, which I saw with Dr. Semple, we particularly looked for this peculiar appearance ; but the appearance of the rectum differed in no respect from that of any other female.

Those who have dissected phthisical patients must be likewise aware that this infundibuliform appearance will be often found, as it depends upon the absorption of the fat. An inflammatory affection may cause a swelling of the parts around the anus, and give the opening a funnel-shaped appearance : hence, then, we infer that the crime may have been committed without this pretended sign being present ; and if it does exist, there is no reason to suppose that the crime has been perpetrated. The reader will therefore appreciate the value of such a symptom.

The color of the discharge has been cited as assisting the diagnosis ; but, taken alone, this is of no use, for it does not give the surgeon any information as to the cause.

In simple blennorrhagia of the rectum, inoculation affords no assistance. Provided chancres be present, and inoculation produces the characteristic pustule, the case assumes a different aspect, particularly if chancre does not exist on any other part of the sexual organs ; but if chancres exist on the external organs of the female, there is nothing to prevent the belief that the virus may have dribbled back and produced the affection at the rectum. This is very unusual, but a prisoner should have the benefit of the doubt.

The habits of the patient, or the history of the complaint, will seldom aid the diagnosis, as in judicial inquiries an acknowledgment of the cause of the disease is not likely to be made.

In fine, when no chancre exists, there is no one unequivocal sign that the complaint which the surgeon is called to pronounce upon depends on a disease contracted in unnatural connection. There is, however, a circumstance on which M. Ricord lays great stress : we refer to a rent or tearing of the margin opposite the coccyx and perinæum, which he has never found in persons unaccustomed to the crime. He further states, when this condition has been observed, that the patients, on being pressed, have avowed and confessed the manner in which the disease has been contracted.

PROGNOSIS.—This must be always unfavorable, as, during the acute stage, the passage of the fæces irritates the membrane, and may give rise to abscesses. In the chronic stage, if the disease has reached the deep parts of the rectum, we can have no hopes of speedily curing it, as it is difficult to apply local treatment.

TREATMENT.—The first indication we have to fulfil is to empty the rectum, and to prevent constipation as much as possible. This is best done by lavements. When, however, fissures of the rectum exist, the introduction of the clyster-pipe is difficult, and should not be continued ; laxatives only should be used. Cubeb and copaiba are not only useless but highly prejudicial, as they tend to irritate the rectum, and have no effect in checking the discharge.

The direct means consist in keeping the parts perfectly clean, in employing injections of nitrate of silver of the usual strength, and in some cases advantage may be derived from the use of the tent.

SECTION IV.

BLENNORRHAGIA OF THE MOUTH, NOSE, AND EARS.

M. RICORD, in his immense practice, has never seen any disease or discharge which could be classed under this head; he is therefore disposed to treat such descriptions as fabulous, and to attribute them to simple catarrhal affections.

In the umbilicus, and in the fold of the groin, discharges may appear as the consequence of dirt or the development of mucous tubercles; the treatment must of course be founded on general principles and on the consideration of the cause.

CHAPTER V.

NON-SPECIFIC AFFECTIONS FOLLOWING SEXUAL INTERCOURSE.

BEFORE concluding what I have to say upon the first part of this work (composed as it is of non-specific diseases, and which has hitherto been principally confined to a description of blennorrhagia and its consequences in both sexes), a few pages must be devoted in the present chapter to the non-specific affections which come under the general term—venereal diseases, and which from the sketch I gave of my arrangements at page 2, I must now describe, to make this work a complete epitome of the knowledge we possess at the present day of venereal diseases; under this group come vegetations, herpes praeputialis, eczema, and excoriations, which I shall successively describe in the following sections.

SECTION I.

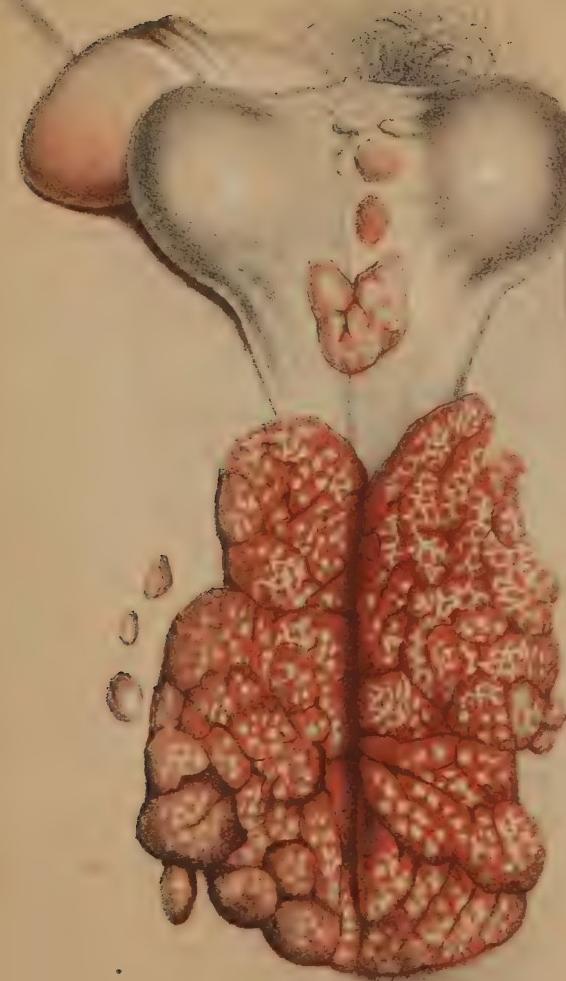
WARTS, VEGETATIONS.

UNDER the general term of non-specific affections, I place vegetations, which, though not necessarily, are frequently a consequence of sexual intercourse, and must therefore be here considered. Vegetations are generally designated by the terms, warts, cauliflower excrescences, cocks'-combs, &c.

PATHOLOGY.—In color, vegetations differ considerably; sometimes they are of a very vivid red or scarlet hue; this happens particularly when they are seated on the glans penis, at the entrance of the urethra in the male or female, on the inner margin of a narrow prepuce, and, generally speaking, when they are not constantly exposed to the air. When seated on the skin they are much paler, and by exposure become even quite black.

Their consistence and sensibility differ considerably; they may be quite horny, very little if at all sensible, and quite dry; or they may be moist, secreting a serous and offensive fluid, flaccid, and sensible to the ordinary stimuli.

Sometimes they are attached to the skin by a sort of pedicle; others have a broad base, and are flattened. In number and size the same variety occurs; we often meet with one or two very small and pointed; in other instances, the male or female organs may be completely covered with them. They are more frequently situated on the mucous membrane than on the skin; although they are



met with on the thighs, still they are more frequently found on those parts of the skin which are more closely allied to mucous membrane. Their growth there depends apparently on the little pressure excrcised on them and the moisture which surrounds them; for if pressure be made, and if artificial means be employed to keep the parts dry, their growth is retarded.

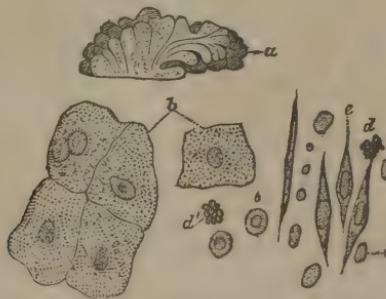
My friend, Mr. Paget, has kindly furnished me with the following account of the microscopic structure of these bodies:—

"The warts examined, were specimens of ordinary appearance from the glans penis and the lining of the prepuce. They were narrow-stemmed, and on their broad and flat expanded parts bore a crowd of small and often-flattened conical processes. In all the cases they were of recent growth, and appeared very vascular.

"They consisted of two principal substances, namely, an outer epithelial covering, and an inner vascular tissue, like certain forms of rudimental cellular tissue. The epithelial covering was composed of numerous layers of tessellated, scale-like cells, resembling, in both structure and arrangement, the epithelial cells covering the glans and inner surface of the prepuce. The epithelium thus extended over the whole wart formed fully half its substance.

"The vascular substance of the warts was continuous with that of the thin dermal tissue of the glans or prepuce, and was connected with the subjacent looser cellular tissue. It consisted of a pale and obscurely filamentous blastema, in which were imbedded very numerous bodies, like nuclei, oval, shining, dark-edged, well defined, made more distinct by ascetic acid, and having no nucleoli. It had all the characters of such nucleated blastema as is found in the rudimentary state of many normal examples of fibro-cellular tissue."

This account, I may mention, is in most particulars confirmatory of that given by Lebert, Bennet, and Simon; Dr. T. W. Griffith has also favored me with the following sketch and descriptions of the elements which he found in vegetations:—



Microscopic Structure of Warts.—Magnified 300 Diameters.

a, Transverse section of a mass of warts, slightly magnified; *b*, Scales of pavement epithelium, most abundant at the surface of the warts; *c*, Free nuclei; *d*, Globules of fatty matter; *e*, Fibro-plastic cells.

The fibro-plastic cells and free nuclei are most numerous toward the base of the warts. The free, fatty globules probably result from the fatty degeneration of the epithelial cells, which may, perhaps, account for the brittleness of the extremities of the parts. All the epithelial cells contain fatty matter to some extent.

Warts are plentifully supplied with blood-vessels, bleeding freely when cut; their sensibility differs greatly; in some cases vegetations are nearly destitute of sensation; when they have been much irritated, they become exceedingly sensitive, and the secretion they give rise to, seems to increase that sensibility. Pearson states that in negroes the hard wart is black.

THE CAUSES appear to arise from irritation; some persons believe them to be the consequence of venereal disease, and pretend to speak of syphilitic

vegetations as distinguished from others. Observation leads me to the following conclusions : Any secretion which will occasion irritation of a surface for a prolonged period, may produce vegetations. We have often seen them in boys and adults affected with natural phymosis, or who fail to pay any attention to cleanliness ; in such cases, it is the acrid secretion of the glandulae odoriferæ which produces the disease, for connection has never been indulged in. Sir A. Cooper, in his valuable lectures on surgery, mentions two cases, which he thinks proves that the secretion of warts is contagious, but he does not think that the blood of these bodies can become the infectious agent. I have met with similar cases, still I am not prepared to say that the matter they secrete possesses any peculiar property, acting otherwise than as a simple irritant, and as such is alone sufficient to produce warts.

In females warts depend upon gonorrhœa or irritating discharges ; the secretion of chancres often produce them, not, I believe, in virtue of any specific action, but from its irritating qualities, and modern authors have ceased to consider them a secondary symptom. It is of great importance in medical jurisprudence that these points should be properly appreciated. I may here mention an instance. A late *interne* at the hospital St. Louis, was shown a child with these vegetations completely encircling the genital organs, which he instantly pronounced to be syphilitic ; and the mother immediately suspected an old man who lived in the same house with her, and who was in the habit of playing with the child ; and the answers of the child appeared to corroborate these suspicions, or they were (as often happens) tortured into an acknowledgment. The authorities were apprized, but did not think it necessary to take any measures. I examined the child, and found that the vegetations existed in great numbers, of a dark and horny consistence ; there was a considerable quantity of serous discharge from the vagina. The child was puny and lymphatic ; but I could detect no marks of violence on its person. These circumstances induced me to think the *interne* had come rather hastily to a conclusion on the nature of the vegetations. Their pale, horny, dark character proved that they had existed a long time, notwithstanding the statement of the mother, who seemed at all risks to tax the old man with rape. The discharge from the vagina, as I assured the *interne*, was often present in scrofulous children ; it existed in this instance, and its serous character showed that it did not depend upon recent infection. Now these appearances did not tally with the commission of rape, or the idea of infection contracted a few days before. I believed the man innocent ; and I mention the case here, as the circumstances which attended it are peculiar, and should put surgeons on their guard.

COMPLICATIONS.—Vegetations may exist alone, or become complicated with a variety of other affections : in the female we often find discharges which produce, keep up, and aggravate the complaint. Excoriation of the surrounding tissues is often likewise a complication. Ulcerations, both of a simple and specific nature, frequently attend the complaint, and render it more difficult of cure. But by far the most frequent complication in the London hospitals consists in condylomata, and hence these two affections are often confounded together, and attributed to the same cause. 'In the female, the situation of vegetations often gives rise to a complication, particularly when they are of a very vascular kind and occupy the meatus, causing that affection which has been described by Sir C. M. Clarke and Sir B. Brodie. In the male, vegetations co-exist with balanitis, chancres, paraphymosis, and phymosis, complications which are often severer than the original affection, and which it is necessary to remedy previous to treating the vegetations.'

The **DIAGNOSIS** of vegetations is generally easy ; there is, however, one affection with which they may be confounded : I allude to *condylomata*. The practised eye will, in such cases, however, rarely be deceived. The former

affection is pedunculated, the granules small and covered with epidermis; their color is florid. The history of the case, and the existence of some irritation, help the diagnosis.

In the latter affection the base of the condylomata is large, the granular patch is flat, and covered with a whitish or yellow secretion, rarely occurring without other traces of secondary symptoms, probably the patchy excoriation of the tonsils, or a papular eruption on the body.

When vegetations and condylomata occur together, the local characters I have above mentioned aid the diagnosis.*

The PROGNOSIS is favorable, although the patient should be made aware that, when destroyed, vegetations are very liable to recur. If not removed, however, they may create great local irritation, and produce very intractable sores, although possessing nothing specific. In some few cases I have witnessed—when vegetations are very extensive—no sooner does the surgeon get rid of one crop than another appears; the disease is hydra-headed; but, under the treatment which I shall immediately recommend, this rarely occurs.

TREATMENT.—When vegetations are few in number, it is only necessary to remove the cause which keeps up the irritation, and they will disappear of themselves. Ablution with tepid water, or an astringent wash, will often suffice, provided dry lint be used to prevent the vegetations coming in contact with one another. They shrivel up, soon fall away, and are not reproduced. In slight cases like these, powder of the oxyde of zinc may be employed by means of a puff-ball: the advantage of this over other powders is, that it undergoes no change, and does not become rancid. For the first day or two after employing the powder, and before dusting over the vegetations afresh, it will be well to soak and dry them, particularly if the secretion be abundant. If these simple means fail, and if the warts be of a dirty white color, not florid, I desire the patient to apply twice a day a pinch of a powder, composed as in the following prescription, and separating the granules, allow the powder to fill up the interstices, and then further keep the parts dry by means of dry lint. On soaking the part in warm water, the next day or two, the little dry vegetations may be easily rubbed off.

R. P. Ceruginis,	
P. Sabine,
M. ft. pulv.

In following out this treatment, it will be necessary to use astringent injections in the female, as well as to plug the vagina with cotton or lint; and in the male, if there is (as often occurs) a narrow prepuce, the former precaution must be attempted, for it is in vain to cure vegetations, unless we can protect the parts from moisture.

When the vegetations are very red, and the parts around much excoriated and inflamed, I should recommend the surgeon to apply a saturated solution of opium to the warts, and keep them constantly damp with the solution, by means of rags and oiled silk. The solution may be made in the following proportion:

R. Pulv. opii.....	3ss.
Aqua.....	Oj.
Coque ad.....	3xij.

Or when the irritation has somewhat subsided, powdered opium may be sprinkled over the parts, and the dry treatment had recourse to.

Excision with the curved scissors may be resorted to at once, when there are only two or three little masses, particularly if they are pedunculated, but this is a painful and difficult manner of cure; and there is great liability to their recurrence.

* See the Chapter upon condylomata in the second part of this work.

I have found the greatest benefit from the application of caustic to the larger masses of vegetations, particularly those crimson ones which are flat and large. I find nitrate of silver not active enough, and I prefer forming a paste, by adding a small quantity of spirit to the Vienna paste, and, by means of the point of any steel instrument, placing the paste on the mass of vegetations to be destroyed. No sooner has the paste touched the surface than it becomes blackened, and it may be wiped away with lint, and the paste again applied, until the whole mass is removed; this is a painful but effectual process, and chloroform or opium may be previously given. After their removal, the greatest cleanliness must be enjoined, and as the ulcerations heal, no return of the complaint will follow, provided the precautions spoken of above are attended to. I have never found any general treatment beneficial in the cure of vegetations, although I have tried many of those that have been most vaunted; let the surgeon attend particularly to the local treatment.

SECTION II.

HERPES PRÆPUTIALIS.

THIS complaint has been arranged by Willan and Bateman under the head of vesicular diseases; seen at the earliest stages, no doubt can exist of its nature, but the fluid in the vesicles soon loses its transparency, becoming more or less purulent.

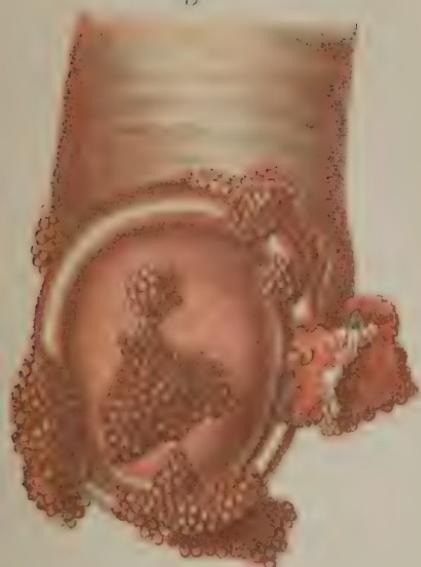
Herpes præputialis commences with some itching of the part; at first mere redness is observed, soon followed by a patch of tiny vesicles, which become filled with a transparent liquid; in size these vesicles equal a pin's head, and there are usually five or six clustered together; their place of selection is the prepuce, where its loses its character of skin, to assume that of mucous membrane. In many cases the complaint confines itself to the prepuce, in other instances, patches similar in character are to be met with on other parts of the body. When the vesicles have reached the size of pin-heads, the itching increases, and they become ruptured, either by the friction of the trousers, or the nails of the patient; the secretion is now yellow, and forms one crust, thus marking the character of the complaint. When rupture of the vesicles has not taken place, we observe the secretion in the patches of vesicles changed to a semi-purulent character; they shrivel, and the fluid escaping, forms a yellow pellicle on the surface, surrounded by a red areola. If irritated, the whole may coalesce into an ulcer, which is seen on removing the little scab; but most frequently the secretion dries, and the scab falls off in a few days, leaving a red but entire surface below.

CAUSE.—This can generally be traced to some derangement in the stomach, or indiscretion in diet. Some persons are very liable to the complaint, and are unable to eat certain sorts of food, or take late suppers, without suffering the next morning from the affection. In the majority of cases, knowing the cause, they pay little attention to it, but if promiscuous intercourse has been indulged in, they necessarily get alarmed, and apply to their surgeon, who is generally enabled to distinguish the complaint from chancre.

DIAGNOSIS.—When seen in the first stage, as a patch of vesicles, no doubt can exist, even if it follows connection. Syphilis never puts on this form; but when the secretion has become purulent, it is difficult to distinguish it from a crop of follicular chancres, as seen in Plate III., fig. 4. We must here depend upon the history, the existence of a patch of vesicles, and the predisposition of the patient. In all instances, however, the case must be carefully watched, and in twenty-four hours the surgeon will be able to form an absolute opinion.

PL. V

3



2



4



1



This is the more necessary, as the treatment proper for the one form is highly injurious to the others. It is very difficult to decide, when a crust is formed over the vesicles, or when an ulcer is produced; and it is only by inoculation, or by the course of the disease in the next twenty-four hours, that the surgeon can form an absolute diagnosis. Irritating applications will soon produce a nasty, unhealthy sore.

TREATMENT.—The first object in view is to allay the itching, which is a very annoying symptom. This is best done by bathing the part in bran and water, and prescribing a bath every other day, to remove any source of irritation of the skin; taking a slight aperient, and attending to the general health by slight tonics and alkalies, at the same time desiring your patient to attend strictly to diet, and avoid any article which may disagree with the stomach. Generally, immediate relief is felt by water-dressing with bran-water or goulard-water; but the unguentum zinci may be employed, particularly when the surface is covered with little scales, care being taken, however, to soak the part well, so that the ointment does not become rancid. This disease usually gets well in a day or two; and if it does not, either the treatment employed has been improper, or there is fear that chancre complicates the case: to the treatment, therefore, of that complaint, I must refer my readers.

SECTION III.

ECZEMA.

THE surgeon is occasionally consulted on account of a severe affection of the genital organs which pathologists call eczema. This disease is generally spoken of only in treatises on skin diseases; however, as it occasionally is a consequence of sexual intercourse, I have thought proper to allude to it here.

CAUSES.—Eczema can generally be traced to the application of some irritating substance to the skin. In the cases which we are about to treat of, the blennorrhagic discharge is the usual exciting cause, together with inattention to cleanliness; hence we very frequently witness the affection in prostitutes. In men, however, who work in a business where much powder or dust is disengaged, this affection of the genital organs is not uncommon, and of course quite independent of any venereal complaint. The surgeon should not forget that mere friction of the trousers will produce it: by itself, it is no sign of venereal disease. I have found it more frequently in persons who have red or auburn hair than in other individuals.

SYMPTOMS.—Eczema is characterized at its commencement by a feeling of itching, heat, and redness; the parts become swollen, and these symptoms are followed by an eruption of small vesicles scattered over the surface. When scratched, a serous fluid exudes, forming little scales on the skin, and increasing the irritation. The disease may assume the chronic form: the skin is red and swollen, the surface covered with the secretion above mentioned, which is hardened by exposure, and crevices are seen running between the little lamellæ. From these issues, at first a clear, and in the more severe cases a sero-purulent, secretion, giving rise to larger and firmer scales; and the disease is then called *eczema impetiginosæ*.

The DIAGNOSIS is easy generally, and does not require further allusion.

The PROGNOSIS, in simple cases, is favorable; but in the severer forms no prospect of an early or speedy cure can be given, as this affection is one of the most obstinate.

TREATMENT.—Great attention to cleanliness is frequently sufficient to cure

the patient, at the same time that all exciting causes are carefully avoided. In the more advanced stages, local bleeding will be called for, and some emollient application, such as bran-water, goulard-water, poultices—particularly those made of potato-starch; linseed-meal, by its rancidity, often exaggerates the complaint.

In chronic forms, it may be found advantageous to stimulate the part when all irritation has ceased, by rubbing it with nitrate of silver, employing dry lint to prevent friction.

The following case is of very great importance, as showing that eczema may be mistaken for syphilis. I have seen several similar instances:—

Aggravated Case of Eczema Rubrum on the Genital Organs mistaken for Syphilis, November 24, 1849:—

A child, nine weeks old, was brought to me by its mother, in great alarm in consequence of having been told by a medical man that the complaint was venereal. The child was a fine stout boy, but very fretful. The eyebrows presented distinct vesicles of eczema. The inside of the mouth and lips free from disease; but just at their margins, and extending for the space of an inch and a half, completely encircling the mouth, the skin presented a dusky hue, and appeared covered with a thin, shining, dry pellicle, like a recent-blistered surface, interrupted with cracks and crevices, without exudation, except beneath the chin, where the capstring had irritated the surface; and here a serous-looking fluid exuded, and excoriated the surrounding parts. Beyond this, distinct and separate clusters of vesicles could be seen, presenting a dusky hue. On the arms and chest a few small patches of these vesicles were apparent. The disease, however, seemed to have settled principally on the lower part of the abdomen, scrotum, thighs, and nates. The entire surface of these parts presented a shining, but dark or dusky-red surface, as if covered with a thin pellicle, similar in appearance to that found on a healing blistered surface. The temperature of the surface was much above that of the surrounding parts; no vesicles could be detected. This unhealthy-looking skin was creased and plaited, with a disposition to crack; in many places large, thin flakes could be detached. Every movement the child made appeared to cause great pain.

The mother states that her other two children are, and have been, quite healthy; her husband has never complained of illness; she has suckled her own child, which has never been out of her sight; has never nursed any other woman's infant. The child enjoyed good health until three weeks old; at this period it was seized with thrush; the throat became affected, and soon after an eruption appeared around the arms, which has gradually spread over the parts now affected. For some weeks the child was under the care of her usual medical attendant, and treated with powders and ointment. The mother, finding the complaint getting worse, consulted another medical man, who, after looking at her boy, told her not to be offended, but her child had the venereal disease, and mercury was necessary for its cure. He prescribed a gray-powder twice a day. The terror of the mother was, as may be supposed, great, when made acquainted with her child's complaint: for herself she could answer, and as to her husband's conduct she never had entertained the least suspicion. The medical man was no less positive, and further enjoined her not to suckle the infant, lest she should herself become infected. The friends in the meantime becoming alarmed, recommended her to take a third opinion.

On seeing the child, I felt no hesitation in stating that it suffered under an aggravated form of eczema rubrum—a complaint which I more than once have seen mistaken for syphilitic disease; and as it presents several features of great interest, I have thought it advisable to publish it as illustrating the diagnosis of a most interesting class of infantile diseases, not usually dwelt on in

books, yet leading to most lamentable consequences in practice. I presume the dusky color of the skin, the obstinacy of the complaint, and the possibility of the father having been infected with syphilis in his youth, may have imposed upon this practitioner, as it has done on others who have characterized similar complaints syphilitic. My own opinion was formed on the following data: The general appearance of the child, strong and plump for its age, contra-indicated any syphilitic taint: in almost all cases, previous to secondary symptoms appearing, we find children fall away. The skin presents, generally, an earthy hue, and before syphilis has existed six weeks, the infant is reduced to a skeleton. The dusky color of the eruption on the child certainly might lead to the suspicion that the complaint was syphilitic in the minds of those who place much dependence on color as a criterion of syphilitic eruptions, but most modern writers agree in this test being very fallacious, as no recent eruption of a syphilitic character is copper-colored, and many old and non-specific diseases of the skin take on a bluish or livid character. Moreover, the vesicular form of secondary symptoms is a very uncommon affection; those who have had the greatest opportunity of witnessing venereal diseases not having met with more than one, or at most two, instances of the disease. The only affection, then, that this disease could be confounded with, would be that form of the complaint which assumes a flattened, tuberculated form: in this instance no elevations could be seen or felt. The severity and duration of the disease equally bespeak the case to be one of eczema rubrum, as that complaint is well known to be very rebellious to ordinary treatment, unless a correct and even appropriate treatment is recommended, for an exactly opposite one is requisite in the one and the other disease.

In this case, the first indications of treatment consisted in attempting to reduce the temperature of the part, and to apply locally a soothing application. I recommended the mother to place the child in a bran-bath night and morning; to be careful not to employ soap, or dress the child in front of a fire; to keep fine linen rags, damp with Goulard's lotion, constantly to the child's nates and scrotum, reapplying them as often as they became dry; to protect the infant from catching cold, by enveloping it with flannel, so as to maintain the general temperature of the surface.

I am prepared to hear this treatment cavilled at as one fraught with danger, and the probability of inflammation attacking some internal organ. I can only say that, where ordinary precautions are taken to exclude air, no apprehensions need be entertained. I have seen infants like the present very speedily cured, when all other means have failed, and in old people, much reduced, no ill consequences have followed, although, as in this instance, the surface constantly kept wet has been considerable.

All kinds of ointments or greasy applications are, as in this case, prejudicial; they soothe the part for the moment, but seem then to increase the temperature—are liable to become rancid, and frequently occasion a relapse of the complaint.

As the child had taken three gray-powders (its bowels, previously regular, having become relaxed), I did not order any physic, being determined to watch the effect of simple local treatment. The mother was desired to give the child the breast, as in its present condition it would be difficult to find any other person to suckle it, for fear of infection. I desired her, however, to live regularly, abstaining from cheese and raw vegetables, or anything that might disagree with the stomach.

Nov. 25.—On the next morning the mother came to me delighted; her child had been much less fractious, and slept for several hours after the bran-bath; she had constantly kept the lotion applied by means of a damp handkerchief, completely enveloping the parts affected. The temperature of the skin is now

natural, the dusky color of the surface disappearing, and large portions of a thin pellicle are peeling off; motions continue still unhealthy; to continue the same treatment.

Nov. 27.—The skin is resuming its healthy structure; here and there a few fissures, which exude a thin serous fluid.

Nov. 29.—All traces of the disease have disappeared, except red marks which the creases, now rapidly healing, have left. Ordered to leave off the lotion, but to continue the bran-baths night and morning. The child's bowels have become quite regular.

SECTION IV.

EXCORIATIONS.

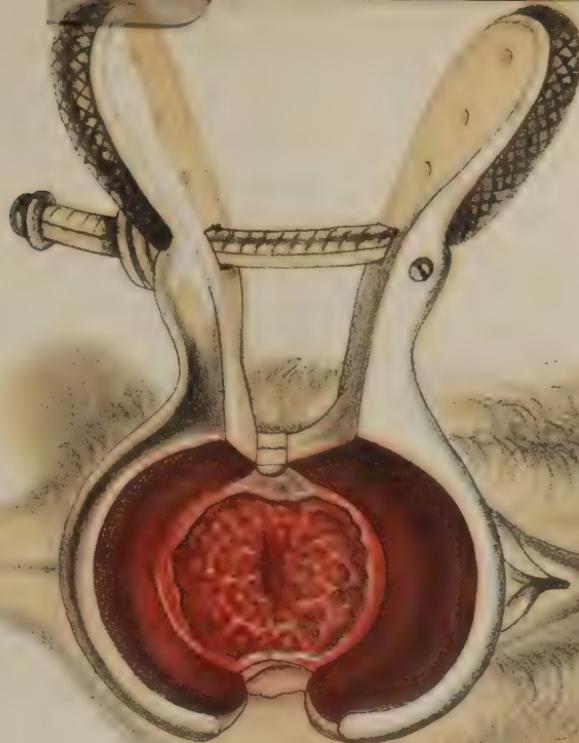
DEFINITION.—By the term excoriation, I here mean abrasion of the epidermis or epithelium—the result of sexual intercourse.

We meet, in practice, with some few individuals who can not indulge in sexual intercourse without being subject to excoriations. Such persons are not observed to have a particularly fine or clear skin; we have met with the affection in patients who, on other parts of the body, have a thicker cuticle than usual, and yet are very subject to abrasions in connection. Excoriations, however, are more commonly met with in persons who naturally have a long and narrow prepuce, and pay little attention to cleanliness.

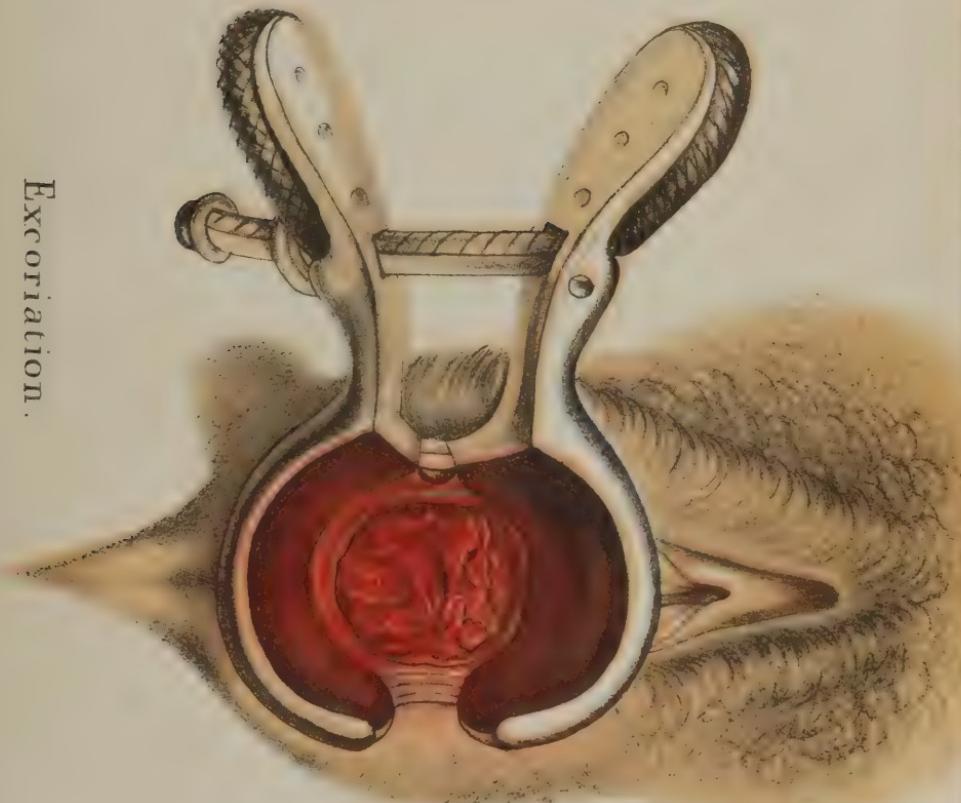
The number and position of excoriations differ greatly, but it is in the neighborhood of the frenum that they are most commonly seen, and they often occur upon the patches of the *glandula odoriferæ* at the base of the glans penis. They may rapidly heal, or, if neglected, ulcerations may follow, and be kept up by the secretions of the part. These sores, as far as physical characters go, we are unable to distinguish from chancres, to which they bear a strong resemblance in situation, size, &c.

The treatment is the simplest possible: washing the penis several times in the day with a little goulard-water, and, when dried, placing a small strip of dry lint between the glans and prepuce, will rapidly cause these excoriations to heal. If any one is more rebellious than the other, it may be slightly touched with caustic. The surgeon, to prevent a repetition of the annoyance, may recommend some astringent wash, and engage his patient to partially uncover the glands. By such means, together with strict attention to cleanliness, or washing the part daily with a little spirit, the abrasions of the skin will not reoccur, and the patient will be relieved from much annoyance and danger, for inoculation will of course take place very readily wherever there is abrasion of the surface.

Granular Condition.



Excoriation.



PART II. SYPHILIS.

In the introduction, page 7, it has been stated that venereal diseases may be divided into two orders; to the first of these I have already sufficiently directed the attention of my readers. The second division, however, remains, which is no less important, if considered in relation to the primary symptoms it gives rise to, or to those general or constitutional affections which modern surgeons believe to be a direct consequence of the primary.

The second order, the description of which will form the subject of this Part, has been styled *SYPHILIS*.

DEFINITION.—Syphilis is a virulent and specific affection, the essential character of which is its dependence upon a *special* cause, or a distinct morbid poison or *virus*, identical, and hitherto thought peculiar to man.

Never arising *sùa sponte*, but always, in the present day, the result of contagion from another person capable of producing, when coming in contact with the economy, local effects, in which we find the fatal cause which has produced them. These local consequences may react on the system, and develop constitutional symptoms which, under certain circumstances, are hereditary and transmissible from the parent to the child, but which can not again reproduce the specific cause which gave rise to them. Now, although this specific cause may reproduce its effects several times on the same individual (when placed under the necessary favorable circumstances), the general constitutional symptoms will occur but once in a man's life. Lastly, syphilis may be called a disease which most frequently requires a special treatment.

The above, which we have called a definition, is then, as Ricord* says, but a programme of what will be found detailed in the following pages, but which it is well for the reader to bear in mind, as it will assist him in understanding the question.

DERIVATION.—The term syphilis is derived, according to Fallopius and Swediaur, from *σύν*, with, and *φίλια*, love; or, according to Bosquillion, from *εἰφύος*, deformed or disgraceful; other authors state that it is derived from *σύν*, hog, and *ψάλτειν*, to love.

ARRANGEMENT OF THE SUBJECT.—Modern authors have subdivided syphilis, as above defined, into separate stages; and this arrangement I shall follow, believing it the most natural, and fraught with the additional advantage of placing the symptoms which successively arise in a clear methodical manner before my readers.

The *first grand subdivision* includes *primary symptoms*, or the immediate effects of the *specific cause*, occurring on the spot where the special *virus* or *virulent matter* has been deposited. Example, chancre and its varieties.

* Gazette des Hopitaux, 1847, p. 455.

The *second grand subdivision* embraces *secondary symptoms*, which follow as a consequence of absorption of the virus; these may be hereditary, but are not capable of transmission by inoculation. Example, various affections of the skin and mucous membranes.

The *third grand subdivision* comprehends *tertiary symptoms*, which are not capable of being transmitted by inoculation, and are not hereditary, but manifest themselves by certain pathological alterations in the sub-mucous and sub-cutaneous tissues, as well as morbid appearances in the fibrous and osseous structures.

After having described these various sub-divisions in the following chapters, we shall subsequently treat of syphilis in the child, and finally allude to those diseases which resemble or bear some analogy with the complaint; by this plan we hope to include all that is at present known of each of the various forms of syphilitic affections.

CHAPTER I.

PRIMARY SYMPTOMS,

FORMING the first great sub-division of syphilis, and depending on the immediate effects of the specific cause occurring on the spot where the special virus or virulent matter has been deposited.

SECTION I.

ARTIFICIAL CHANCRE.

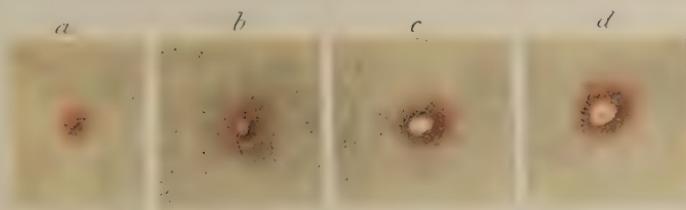
DEFINITION.—*Chancre*, or a syphilitic ulcer or sore, is a specific ulceration depending upon a special and identical cause, always similar in its nature, under whatever form it presents itself, and derived from the secretion of another ulcer, which it reproduces during a certain period of its existence, and which, constituting a local disease at its commencement, gives rise, under circumstances we can often appreciate, to symptoms of general poisoning of the system, known by the term *secondary or constitutional symptoms*.

ANATOMICAL CHARACTERS OF CHANCRE ARTIFICIALLY PRODUCED.—The best means of studying these characters is to observe them in cases of artificial chancre produced by inoculation, as we can here examine them at our leisure. They are well delineated in Plate IV.

If the pus be taken from a chancre during its ulcerating period, and introduced, by means of a lancet, under the epidermis of the inner part of the thigh, or any other part of the body of the same individual, the following results will be obtained.*

During twenty-four hours succeeding the operation the inoculated point becomes red, fig. 1, *a.*; in the course of the second and third days the surrounding parts are slightly swollen, and assume a papular appearance, or already

* Scruples, which can not be too much applauded, have prevented M. Ricord from inoculating healthy men with syphilitic virus, so that our experiments have been generally made on an already infected individual; still in the experiments which have recently taken place in France, and which will be detailed at page 239, where Dr. Weltz inoculated himself from a monkey, and in another instance, in which M. Vidal de Cassis inoculated one of his pupils, it was found that the inoculated point presents exactly the same special characters as when an already infected person is inoculated.



traces of a vesicle are seen on the summit, fig. 1, *b, c*; on the third or fourth day a fluid, which is more or less transparent, is observed beneath the epidermis, and a distinct vesicle becomes apparent, where the papula previously existed, and a dark dot is seen in the centre, owing to the coagulation of the blood which had escaped through the puncture of the lancet, fig. 1, *c, d*; from the fourth to the fifth day the vesicle assumes a pustular character, and a distinct depression is seen in the centre, so that it represents very distinctly at this period the small-pox pustule, fig. 1, *d, e*. The red areola, which has been hitherto gradually augmenting in intensity, now as gradually fades away, and the cellular tissue, which was slightly œdematosus, becomes infiltrated with plastic lymph. On the sixth or seventh day the pustule is observed to be wrinkled, in consequence of the contents becoming thicker, and ultimately a crust takes the place of the pustule, fig. 1, *f, g*. If not interfered with, this crust assumes a conical appearance, increasing always at its base; it may ultimately fall off, or, if removed, leaves an ulcer seated on a slightly œdematosus base, in depth, equal to the thickness of the skin; the bottom of the ulcer is covered with a whitish pulpy substance or false membrane, which adheres so firmly, that it can with difficulty be wiped or washed off. The ulcer is generally circular, and appears as if made with a *punch*, fig. 1, *h*, and fig. 3, *a*.

The margin if viewed by means of a microscope, will be found dentated and covered with a secretion similar to that seen at the bottom of the ulcer. The border is slightly œdematosus and raised, and the areola around it is of a brownish tint than at the previous stages; this œdematosus condition of the border occasions a slight eversion of the edges, and hence the ulcer may assume a somewhat infundibuliform appearance.

If the pus of a chancre, such as we have described it, be examined by the microscope, it will be often found to contain animalcules, particularly the *vibrio lineola* of Müller. The experiments of M. Donné, have likewise proved that it may present either alkaline or acid reaction, circumstances depending upon its situation, &c. This secretion varies in consistence, but is usually of a thin, serous, and sanguineous character; however, the peculiar pathognomonic character of the pus is the action which it produces on the animal economy when inoculated; for I may here state that no other secretion with which we are acquainted, or which I have seen employed, will produce similar effects.

In tracing chancre to the secretion of a previously-existing ulcer (the quantity of which, however minute, will constantly produce its effects), M. Ricord was necessarily led to push his investigations further; but neither the microscope nor chemical analysis has enabled him to isolate the virus: all his endeavors have hitherto failed in separating it from the other component parts of the secretion of the sore, and whether it exists as an entity, or in combination with the globules, or the fluid part of the pus, or whether these serve only as a vehicle for it, we are unable to say, so few are our data for forming an opinion.

We are equally ignorant of the exact parts of the sore which furnishes this secretion. We find it on the surface of the ulcer; washing or wiping it away only removes it for the moment—it becomes secreted afresh directly afterward, but does not resemble the peculiar action of *leven*—a term applied to it by ancient authors.

We shall, then, in accordance with the usual custom of authors, call this peculiar secretion, which is the cause of chancre, a *virus*—not that we have been able to show its separate existence, but simply because the word secretion is too vague. We shall combine it with the word syphilitic, as this term distinguishes it from all other morbid agents, and treat of the cause under the denomination of *syphilitic virus*.

This secretion, removed from the surface of the chancre, and kept in close

bottles during seven days, will produce at the end of that period all its effects, proving that the vitality of the part is not necessary for the preservation of the peculiar effects of the virus. To show the infinitesimal quantity of virus necessary for producing specific effects, one drop has been diluted with a pint of water, and the inoculated fluid has produced a pustule.

Various chemical agents have the property of neutralizing or destroying it; if the alkalies or acids be mixed with it, and inoculation afterward attempted, no effects will follow; these same substances will likewise destroy the property which inoculation has invested the sore with, of producing an analogous secretion, provided they be employed at an early stage.

Simple substances, or ointments, will have no influence either in destroying or aiding the effects of the secretion.

Situation of the sore has been often shown to have no influence on the pus, which acts equally on all parts of the body; no erethism or peculiar vitality of the part is necessary, and the pus need not be warm or recently secreted, to produce its effects.

Until the present year, 1850, this pus has been supposed incapable of producing its specific effects on animals, notwithstanding all the attempts that John Hunter, Ricord, and others, have made to inoculate them. M. Auzias believes, however, that he has succeeded in inoculating animals; but, as stated in the foot-note,* it is still a doubtful question, if syphilis has really been communi-

* Hunter says: "We know of no other animal that is susceptible of the venereal irritation; for repeated trials have shown that it is impossible to give it to a dog, a bitch, or an ass. I have repeatedly soaked lint in matter from a gonorrhœa, chancre, and bubo, and introduced it into the vagina of bitches without producing any effect. I have also introduced it into the vagina of asses without producing any effect. I have introduced it under the prepuce of dogs without any effect. I have also made incisions and introduced it under the skin, and it has only produced a common sore. I have made the same experiment upon asses, with the same result."—*Hunter on the Venereal Disease*, 4to, 2d edition, page 20.

M. Ricord, during the time that he was pursuing his experiments on inoculation of syphilis, attempted to communicate the disease to dogs, rabbits, Guinea pigs, cats, and pigeons, but could not succeed; and he believed, after repeated attempts, that syphilis was not capable of affecting the brute creation.

More recently M. Cullerier, surgeon to the Venereal hospital (in consequence of the experiments of M. Auzias, mentioned below), has, by every means in his power, attempted to inoculate animals; and in a paper to be found in the first volume of *The Mémoires de la Société de Chirurgie*, that gentleman has given at length the experiments he made on monkeys, Guinea pigs, cats, rabbits, and dogs, in all amounting to twenty-five in number, and, although assisted by M. Auzias himself, in no one instance was he successful.

In 1844 Dr. Auzias brought the subject before the French Academy of Sciences, and asserted that he had effected what John Hunter and Ricord had been unable to accomplish. A committee was formed to report on this subject, and they came to the conclusion of *not proven*. Such was the state of the question when, in the month of May, 1850, the subject was again taken up by M. Auzias, assisted by a German physician, Dr. de Weltz, then studying in Paris under Ricord, and from a paper which he published in the French *Medical Gazette* for 1850, as well as a letter in *L'Union Médical* of the same year, by M. Auzias, we take the following particulars:—

The reason why animals had been hitherto unaffected by syphilis is stated by these gentlemen to be, that inoculation had been attempted on such parts of the body as the animals were able to lick; hence the preceding failures. To avoid this, monkeys were inoculated behind the ear, and on my last visit to Paris, M. Auzias was kind enough to show me the plan he pursued. A monkey that had become very tractable, by being fed and fondled by the operator, was chosen; and on the outside of the ear a small incision is made by a pair of curved-pointed scisszors, care being taken that the epidermis is divided, and that the part do not bleed. (I may mention that this part of the skin of the monkey is very fine and delicate, and is almost destitute of hair.) A quantity of chancrous matter is now taken and applied to the incised surface, so that it shall come in contact with the dermis. During the following two or three minutes, M. Auzias continues to moisten the part he is inoculating with an additional quantity of secretion from the chancre, or with saliva. This is done for the purpose of preventing the coagulable secretion thrown out by the incised surface enveloping the virus and preventing its action (as the secretions are stated to be more coagulable in animals than in the human race). It may be here remarked, that a dépôt is left of the virus unlike that in our ordinary experiments in man, and the importance of the fact will be noticed presently. Treated in this way, a red areola will surround the incised point on the following morning, and in twenty-four hours later a vesicle, followed by a pustule; and this again succeeded by a scab with an ulcer beneath, *is said to be observed*. These ulcerations enlarge to a certain extent, then gradually diminish, and ultimately cicatrize. They are stated, during ten days, to have exhibited a kind of induration in the cicatrix, but which subsequently disappeared.

The same animals were taken, and inoculated in a similar manner with the secretion of these ulcers, and a second series of similar phenomena were observed. The secretion was likewise inoculated on

cated to animals; and if, in the few cases in which this is said to have occurred, the virus has not merely been transplanted; this, at least, on the evidence we at present possess, seems to have been the case. Animals occasionally do suffer from an ichorous discharge from the male organs, which has been called the foul disease; but this depends upon irritation. Cancer will likewise attack these organs in animals, producing a sanguous discharge; but this is not syphilis.

PROGRESS OF ARTIFICIAL CHANCRE.—If the sore be kept clean, it may show very little tendency to increase, and may remain a considerable time in *statu quo*, provided no excesses are committed; the disease has a very mild character, quite at variance with those symptoms usually attributed to it. Weeks may pass, and the chancre not be larger than a split pea, although the areola may become somewhat more livid.

other monkeys, and similar ulcers followed. In September, 1850, I saw (through the kindness of M. Auzias) the monkey that had been the subject operated on in the month of July, and a healthier animal I never saw. I examined carefully the skin, and no traces of secondary symptoms could be noticed. The throat was closely examined (for the animal had become very docile), and no appearance of any disease could be observed. The ulcerations on its ears had long been healed.

The operator therefore concludes that he has been able to inoculate animals with primary sores, and that others, by taking the same precautions, will equally and invariably succeed.

My reader will at once, perhaps, ask, is this ulceration on the monkey a chancre; and can it be transmitted back to man? To test this, Dr. de Weltz inoculated his right arm with the secretion from the monkey, and the characteristic pustule, as described at page 236, was produced; and on being shown to M. Ricord, he decided that it was a true chancre. M. de Weltz further states that Ricord inoculated his (M. de Weltz's) left arm with pus taken from the chancre of the monkey, and the usual phenomena were observed; thus clearly showing, in the opinion of Dr. de Weltz, that the ulcer on the monkey was a true syphilitic primary sore. The sores on his (Dr. de Weltz's) arms were, at the expiration of ten days, destroyed with Vienna paste; and the last account he gives of them is, that a black eschar covers the late ulcers, and that a liquid pus exuded from their margin; but although a good deal of inflammation occurred around the ulcers, no tumefaction of the glands of the axilla took place, nor had secondary symptoms resulted, at the time this statement was published (July 22, 1850), the first inoculation having taken place on the 9th of June.

Although I saw the monkey that had been operated on, and although M. Auzias was kind enough to show me his process of operating, my stay in Paris was unfortunately too short to watch the development of the pustule in the monkey, and M. de Weltz had left the metropolis; so I was unable, from personal observation, to judge of these statements.

It would appear, however, that at present the profession in Paris are very incredulous on the subject. M. Cullerier complains, and I think very justly, that M. Auzias, with whom on former occasions he was associated, did not invite him to be present, when his inoculations succeeded, on these recent occasions. The presence of M. Cullerier would undoubtedly have given great additional value to the results. M. Cullerier suggests that, in experiments performed as these have been, in which a large quantity of the virus is taken and inserted beneath the dermis of the animal, it might have been merely kept in a reservoir there, for we have stated at page 238, the virus may be kept many days in a bottle, and then develop in the human being all its peculiar effects; "and," adds M. Cullerier, "the experiment will only be accepted when we have determined a suppurating ulceration, which we may wash several times, so as completely to disembarass it of the pus which has produced it, and which can be subsequently transported to another part of the monkey or man himself."

—*L'Union Médicale*, loc. cit.

"But if," adds M. Cullerier, "my attempts at inoculation have failed with virulent pus, so that I have been unable to produce on any one occasion an ulceration of a chancreous appearance, the same has not occurred when I have wished to determine a wound which presents these characters. Thus, I removed a small piece of skin from the forehead of a monkey, and applied nitrate of silver to it; at the end of forty hours I pulled off the eschar and cauterized the wound afresh, and three days after I had an ulceration which could pass muster as a specific sore with many persons." —*Mémoires de la Société de Chirurgie*, vol. i., p. 531.

M. Ricord, in discussing this subject in his letter on syphilis, in *L'Union Médicale*, tome iv., p. 358, says: "Up to this point only primary and essentially local symptoms have been produced in the monkey: this is not *la verole*. Has the monkey served only as a transplanting ground for the virus? This is possible. We are justified in concluding so until we have been able to produce in the animal constitutional symptoms. This opinion is the more probable, inasmuch as some English syphilographs pretend that a chancre is not a specific sore unless it becomes indurated."

"We here see that this [he is speaking of the little local irritation inoculation produces on the monkey] is ground which is very refractory and foreign to the chancre. The virulent seed or grain is an exotic. Notwithstanding all the precautions which may be taken in order to sow it, water it, or nurse it in a greenhouse or under glass, it dies before it has shot out its roots, and consequently before it produces any fruit."

"Until this experimental programme has been filled up, this solitary experiment will be insufficient to destroy all that has been established by serious men on the numerous and well-studied facts. It can be only said at present, that we can deposit and preserve virulent pus on the monkey, and make use of it afterward to inoculate man, just as we transplant a shrub from one nursery-garden to another. This is all I have seen and satisfied myself about; this is the only deduction that I can draw." —*L'Union Médicale*, tome iv., pp. 369, 370.

If during this period (the duration of which is very uncertain) pus be taken from the sore and the inoculation repeated, the same phenomena will recur, and an unlimited number of chancre may be reproduced; but after a certain time portions of the little ulcers cease to secrete the poison, and ultimately the whole sore fails in supplying any more of the special virus. Of the laws which regulate this we know nothing; but observation teaches us that when the sore begins to throw up granulations from the bottom this period is approaching, and ultimately the little sore heals, like any other ulcer. This period may commence in a fortnight, to be delayed a longer period. Should, however, the little ulcer thus heal, and a cicatrix form, the human frame is as susceptible of undergoing the same local changes from inoculation as previously, an indefinite number of times; the system by being once inoculated with syphilis is no way less predisposed to a second maturation of the pustule; the power that the virus possesses of converting into its own likeness those appropriate materials of the blood which come in contact with it, will still exist in all its pristine force.

Having then now described the course of simple uncomplicated chancre divested of all extraneous circumstances, which only tend to render the subject obscure, let us pause a few moments to make some remarks, and show how far the study of the preceding phenomena may teach us the laws which regulate this peculiar animal poison.

ORIGIN OF SYPHILITIC VIRUS.—We have just traced syphilitic virus to the secretion of a particular sore which itself has been produced by the specific virus of a similar ulcer originating in the same way; at least we can affirm, that at the present day there exists no well-authenticated observation in the annals of science, proving the spontaneous origin of syphilis. Hence we say, that a chancre (primary ulcer) at its period of progress, or during its specific *statu quo*, is the only source of the syphilitic virus (the inoculable morbid poison).

Undoubtedly (observes M. Ricord), we daily meet with cases which it is difficult to explain; but when we consider the many sources of error liable to occur, and that our patients have an interest to deceive us; when we reflect that the disease is so often contracted under illicit circumstances, we should remain convinced that the one exceptional case* in a thousand ought to be attributed to the same cause as the nine hundred and ninety-nine, the origin of which is regular and constant; and until it can be shown that other agents as well as the secretion of a chancre will produce true syphilis, we shall believe that it can arise alone from the secretion of a previously existing sore.

We must, however, frankly state, that in the present state of science it is impossible to determine where, when, or under what circumstances, it first appeared; in this respect, however, the origin of the virus is concealed from us, as is that of many other material objects; but, although the origin of a thousand facts be concealed, the existence of these facts is incontrovertible.

My own opinion is, that syphilis in the human race originally arose from some poison introduced into the economy from animals, and that, thus produced,

* Mr. Carmichael says, page 17, in his Clinical Lectures on Venereal Diseases: "From these circumstances we should be led to conclude that mild forms of disease are eternally arising from the sexual intercourse of even persons in health; and I have so often seen troublesome ulcers arise in men who had connection with women above suspicion, while they had on them at the time crops of herpes pretuliales, that I feel the more confirmed in this opinion."

Dr. Ferguson, in his Notes and Recollections of a Professional Life, page 122, says: "I believe, with my friend Mr. Guthrie, that wherever prostitution is foul and unclean, restricted to few women among crowds of men, there the infection will be generated, which afterward spreads through society at large. The irregularities of man are at all times punished by the generation of diseases and loss of health; and it would be difficult to believe in a superintending Providence, if this transgression of Divine and human laws should be allowed to pass unpunished."

These, and other similar opinions, are at best but convictions, and as convictions are very different from well-authenticated facts, I shall not discuss them further. The reader, on referring to page 8 of Introduction, will find cases which might have been readily taken for syphilis arising *de novo* in the present day.

it has been transmitted from one individual to another. And I by no means disbelieve that by directing our attention to the subject, we may be able one of these days to detect how this takes place; and I trust that the important hints to pursue this investigation further (which I have placed in the foot-note*), may direct the attention of the profession to this important question, and I shall at all times be very happy to receive any facts, or have my attention called to any cases bearing on the question.

Let us now turn to consideration of those accessory circumstances and conditions which are necessary for the production of the special effects of the virus. These we propose describing under three heads.

* The first hints that I have found of this opinion, expressed in rather an allegorical manner, are those by the Belgian, Van Helmont, who published his work in Latin in the year 1640. That author states: "A layman said that he had beheld in his mind's eye a mare which was nearly dropping down from a foetid ulcer, which disease is peculiar to the nature of horses. The people of our time call it 'deu worm,' but the French 'le farcin,' by which horses gradually die from purulent caries. This beast he saw cast aside as meat for dogs, presenting the whole hide diseased, even to about its sheath; nor had he another answer beyond this hypothesis: on which account he said it was his suspicion that at the siege of Naples (where this dreadful disease first made its appearance) some one with horrid abomination had connection with a beast of this sort. Thence truly I conjecture the infrequency of this disease not having been noticed before, for I can not suppose than an abomination of this sort had ever been easily committed under such circumstances since the world's formation; and the disease of syphilis is similar, nearly related and common with that occurring in horses. And it might thus, by the avenging power of God permitting, have transplanted its rage naturally upon the human race, threatened as it had been by God before. I mean to affirm, that contagion, the result of wicked lasciviousness, has flowed from the horse (just as at this day the disease itself is conveyed through libidinous sordid passion to the testes of the male), propagating gonorrhœa, carcinoma, and venereal bубо; but I give up being over-inquisitive upon any matter where science is of no use, unless you prefer concluding from hence that horses thus full of sores, might be cured by the remedy of syphilis, namely, mercury duly prepared. The consideration of syphilis is of service in the noisome and increasing pest of this day, and many are the pests which are threatened in the sacred writings on the coming of Antichrist."—*Tumulus Pessus*, page 26. *The original may be seen in the library of the Royal College of Surgeons.*

This opinion of Van Helmont has been much ridiculed, but future experience will show whether at least there is not some foundation for the belief. Within the last twelve months an eminent surgeon to one of our largest provincial hospitals (who begs me not to mention his name) told me that some years ago he was consulted by a country lad who was suffering under what he, as a surgeon, considered to be secondary symptoms; the patient denied having ever had connection with women, but acknowledged that he had had unnatural intercourse several times with a mare. I may be told perhaps that an isolated fact like this proves little, and so it does; but in combination with what others have observed, some little value may be placed on the statement.

I find the following in my note-book:—

Peculiar Affection resembling Syphilis in a Blacksmith's wife.

March 14, 1845.—Mr. Lane took me to-day to see the wife of a blacksmith, living in Tattersall's Yard, laboring under the following symptoms:—

The middle finger of the right hand (the first joint of which had been removed) presented a livid red thickened cuticle, the epidermis peeling off in small scales; the cicatrix of the finger that had been operated on presented the same appearance; the surface was rugous, there was inability to move the second joint; it looked like the rugous leg of elephantiasis, only livid, or like boiled ham. The discoloration was confined to this finger; running up the back of the fore-arm, we observed several little tumors as large as split horse-beans. There was no discoloration of the skin over them; and each little tumor was perfectly movable. On the lower lip was an ulcer of the size of a broad bean; the edges raised, the bottom partly covered with a white secretion, and here and there a soft but large granulation. Close to this was a spot, level with the surface, like a stain, as large as a split pea, in color like boiled ham. No other spots on the body. Her pulse presented nothing unusual; the tongue clean; the patient's constitution phlegmatic, complexion blond, gums pale.

HISTORY.—Some time since an ugly, ragged-looking edge of the nail of the middle finger became irritable without any cause that she was aware of, and spread to the joint, where the pain remained without remarking anything peculiar; as the cicatrix was healing, the finger suddenly took on the unhealby action, and soon afterward the tumors appeared on the back of the arm, and subsequently a little spot on the chin like the stain now present, became circular and extended to the present size.

On mentioning this case to M. Ricord, on the occasion of my late visit to Paris, he stated that he had likewise met with a few cases that bore out the opinion, that by some means or other animal poisons produced effects on the human system which bore strong analogy with syphilis; among others he mentioned the case of a shoemaker, brought into hospital with ulceration of the palate, an ulcer on the eyebrow, and a tumor in the calf of the leg. In all respects these symptoms resembled those of syphilis, but the man had never had syphilis. Could the affection be farcy? On inquiry, M. Ricord learned that this shoemaker was in the habit of going frequently into the yard of a veterinary surgeon who lived close by his house, but the exact means by which the affection (if farcy it was) was gained never appeared. Pot. iod., added M. Ricord, succeeds in relieving syphilis, but it has little effect on farcy, hence our diagnosis in these doubtful cases.

* Of late years the possibility of farcy and glanders being conveyed from the horse to man has been

PRIMARY SYMPTOMS OF SYPHILIS.

1. Necessary conditions of the chancre from which the virus is taken.
2. The means and conditions of the agents of transmission.
3. The necessary conditions of the parts about to be contaminated.

NECESSARY CONDITIONS OF THE CHANCRE FROM WHICH THE VIRUS IS TAKEN.—In the first place, it must itself have been derived from another chancre, which must be at the period we have called specific or progressive,* for we have already remarked that it is alone during this period of the chancre that the peculiar virus is secreted. Provided the chancre presents this progressive ulceration (notwithstanding the length of time it has existed)—be the physical characters well marked or ill defined, the shape circular or oval, the situation on the genital organs, arms, mouth, &c.), the virus will produce its effects if the other conditions be present.

We have just stated a general law, namely, that certain conditions of the sore, from which the virus is taken, are indispensable to the production of chancre. Yet to this law there are apparent exceptions: a man has connection with a prostitute, and chancres appear on the penis; the external and internal genital organs of the girl are examined, and no chancre is found. Here is the virus acting, and yet, say some people, it does not come from an ulceration. Such cases in practice are not uncommon, but they in no respect invalidate our position, for there is every probability that the virus has been recently deposited from an ulcer of a third individual on the vagina, which, being covered with mucus, prevents its local action on that membrane, and thus the vagina merely serves as a vehicle for the virus, as any one of the means we are about to speak of.

THE MEANS AND CONDITIONS OF THE AGENTS OF TRANSMISSION.—The fact that the virus is capable of being separated, during a space of seven days, from the ulcer which has produced it, without losing its contagious properties, has been already mentioned. At the end of that period, if still in a liquid state, or, if dried, provided it be only moistened, the virus may be transmitted in

investigated, and numerous cases of rapid death have been detailed, but the more chronic affections have been little studied. May not many cases of intractable sores be in future found to depend upon chronic farey, contracted from the horse? And should the attention of practitioners be now called to the fact, may we not hope to arrive at much valuable information, and may we not be able to learn the true source of syphilis?

In the former edition of this work I cited M. Ricord's opinion, in which he says: "If we may be permitted to proceed by analogy, we shall see in the history of the vaccine matter several curious and important inductions. The transmission from the cow to the human species has not always been so well known, yet it must have always occurred. Suppose, then, that at the present time we were ignorant of its origin, it would be no less incontestable that the vaccine matter is not of spontaneous origin in the human race, and that it becomes developed as a consequence of inoculation, or by means of the specific matter taken from an unaffected person, and applied to a healthy individual. Is it not possible that an analogous source, in the first instance foreign to the human species, may have furnished the first germ of syphilis, which, when once engrafted, has propagated and maintained itself, as the vaccine matter, which, like it, was at first foreign to the human species?" I would, however, by no means wish to confine the surgeon's attention to the possibility of syphilis arising from the horse. In the course of my practice I have seen some curious affections very much resembling syphilis; many of my profession will recollect the raised tuberculated ham-colored blotches, or tubercles, on the fingers of a young deceased physician, which had long been incurable, and which he first contracted in the dead-house, where he spent a large portion of his early life in the investigation of morbid anatomy.

Mr. Busk, some years ago, kindly directed my attention to a patient then under his care in the hospital ship Dreadnought, with a pustular eruption over the whole body that almost every one would have taken for secondary symptoms, and yet he (Mr. Busk) is familiar with the complaint as one occasionally brought on by eating bad meat.

These and other cases that I could relate, render it more than probable that syphilis may have originated in some such way, which we may one of these days be better acquainted with.

* The following statistics on inoculation are given by Dr. M'Carthy in his "Thesis," page 10:—

"In the wards of M. Puche, inoculation with blennorrhagia was performed sixty-eight times without producing the specific pustule.

"In the instance of inoculation with the secretion of twenty-four chancres, the specific pustule was produced sixteen times. In the other eight instances in which the negative result was obtained, such a result was foretold; in five instances the chancre had assumed a granular, rose-colored, reparative process, in two instances the chancres had previously cicatrized and broken out afresh; in one case the chancres had assumed a gangrenous character." These results are important, as they were made by one opposed to many of the doctrines of M. Ricord.

a variety of ways, of which we may enumerate some of the most frequent:—

Lancets or other *cutting instruments* may accidentally become soiled with the virus, and thus the surgeon may unconsciously inoculate an incised wound. We have been witness of a case of this kind: venesection was ordered and performed in the usual way; a few days after, the patient drew the attention of M. Ricord to the point of the arm, which assumed *all the characters of chancre*, and was very difficult to cure, as induration followed. Such a case shows the necessity of great caution in the employment of instruments which may have been soiled with the virus.

The *Penis* may serve as an agent of transmission of the virus, as in cases like the following: A young man had connection with a prostitute; in the course of the same day he had connection with a female who previously had been free from disease. In a short time chancres appeared on the second female, although the young man never presented any symptoms whatever of syphilis. Here, then, the penis was a simple agent of transmission, as the lancet was in the last case.

The *Vagina* may become a means of transmission of the virus; this frequently happens in prostitutes. An individual suffering under chancres has connection with a girl; a quantity of virus is left in the vagina, but produces no action, as the mucous membrane is covered with secretion. Should a second individual have connection with this female under these circumstances, the virus may affect him, and no local disease be discovered on her genital organs, even after the most minute examination. Such cases are not unfrequent. Here the penis has performed the part of a sponge, and completely cleaned the vagina, which was simply a passive agent of transmission.

To render this still more certain, M. Cullerier has recently, at the Ourcine hospital, placed virulent pus on the vagina of a woman, and allowed it to remain a considerable time there; has then taken it on a lancet and inoculated it with specific effects; the vagina afterward has been washed out by means of injections without the virus producing any local effects.—*L'Union Medicale*, tom. iv., page 197.

Various secretions have been often accused of causing or transmitting the virus. The *semen* is spoken of as among the most frequent. That this may occur is undoubted. When a urethral chancre exists, the semen may, in passing over it, carry along the virus which is placed on the surface. In a similar manner the *milk* may become a vehicle for it, provided a chancre exists on the nipple. The *saliva* may become charged with the virus, if a primary sore exists on the mouth, of which we shall hereafter give instances.

At the present day we are little disposed to give credence to stories of chancre transmitted by means of the *breath*; and in the nineteenth century a minister of the crown is not likely to be accused of communicating the affection to his royal master by means of whispers. We now-a-days attribute a chancre rather to the company a man keeps than to the air he breathes.

Various articles have the character of transmitting chancre. The late Mr. Colles believed that in Ireland the inmates of a cottage became infected by the use of the sole *spoon* that a peasant-family possesses.

M. Cullerier mentions that at the Venereal hospital chancres may be transmitted from one individual to another by means of *tobacco-pipes*, *drinking-glasses*, &c. The employment of *chamber-pots*, and sitting on *water-closets*, have been successfully invoked to explain various difficult cases. Believing that such means of transmission are possible, we maintain that they are not probable, and the medical man will rarely have his credulity taxed on this score except by married people; patients will be always disposed to conceal the true source of the disease, particularly if illicit practices have been indulged in; and in affec-

tions of the mouth it occasionally is very difficult to distinguish primary syphilitic sores from various aphthous ulcerations which are epidemic, and run through whole families, in consequence of similarity of diet, clothing, low, unhealthy situations, &c.

Sheets have been believed capable of transmitting the virus. Patients affected with simple eruptions of the skin have slept in sheets on which the secretion of chancres has fallen, and simple sores have thus been converted into characteristic chancres. I witnessed a case where this was the ostensible cause of the complaint in a patient of M. Puche, who presented chancres on the penis; he stated that he was taken up in consequence of the riots of May, and put in a prison where prostitutes had been previously kept. About two months afterward chancres appeared on the penis. Now in this case the patient wished us to infer that the sheets were the source of the affection; but when we state that the prisons of Paris are the scenes of unnatural crimes, we should rather conclude this to be the source of the sores, and not the sheets.

Various articles used in dressing wounds may accidentally become the means of transmitting the virus, particularly *sponges*, *lint*, &c. During the winter of 1839, M. Ricord removed a portion of diseased bone from the orbit of a patient laboring under tertiary symptoms. The wound took on a peculiar appearance some few days afterward, and inoculation of the secretion at once showed that this wound had, through the medium of the lint, or the water, or sponge (it was impossible to say which), became inoculated with virus from another source, for the patient himself presented no primary affection. In this case the instruments could not have been the source, as they were new, and had not been previously used. This case should put the surgeon on his guard, and in venereal hospitals the greatest attention must be paid to cleanliness; this, however, is not always possible, in consequence of the habitual carelessness of the attendants.

THE NECESSARY CONDITIONS OF THE PARTS ABOUT TO BE CONTAMINATED.—For the production of artificial chancre *on the skin*, we have already stated that it is necessary to introduce the virus beneath the *epidermis*, and we may add that an abrasion of that structure is always necessary for the action of the poison. In practice, we find that chancre follows abrasions, excoriations, fissures, incisions, leech-bites, wounds, scratches, &c.; hence results that variety in shape which the sore may assume. Around the rectum we observe those ragged fissures which have no analogy with the circular chancre described by Hunter. We have lately seen a chancre on the thumb of an individual, having the shape of an ordinary small incised wound. He stated that, in following his occupation as a tanner, he cut his hand; he slept soon afterward with a prostitute; the cut surface became inflamed, and the patient was unable to cure it with the usual remedy, namely, bathing the hand in the tan-pits.

The previous considerations will at once explain why the animal economy is more liable to chancre at one period of life than another. Thus the delicate skin of the infant, as well as its greater vitality, render infection (*cæteris paribus*) more probable than at any other period of life; on the contrary, the dry and shrivelled condition of the tegumentary covering in the decline of life causes chancre to be comparatively rare. We find, moreover, that absorption is sluggish, and the chances of exposure to the virus are less than at the age of puberty, when the passions of youth and a carelessness of consequences lead to such frequent exposure.

We may mention the influence of sex as a predisposing cause. The female exposes herself less than the male, consequently is less frequently the subject of syphilis; but when, as in the case of prostitutes, the female exposes herself

to contagion, we find chancre less frequent: this depends upon the structure of the female genital organs, which are not so liable to abrasions as the male, and are freely lubricated with mucus, thus shielding the genital organs from the action of the virus.

For the production of chancre on mucous membranes, the same principle holds good; there must be a lesion of continuity of the epithelium, otherwise the virus will have no effect. There is an apparent exception to this law, but closer observation shows that it is not a real one. The virus may insinuate itself into a mucous or sebaceous follicle, and having destroyed its lining by a species of irritation, comes in contact with the cellular tissue, and then a pustule or abscess is formed. When situated in a little mucous follicle, the virus may remain inactive for some days in consequence of being surrounded by the cyst; the virus is then in the same condition as when enclosed in bottles; the cyst becoming corroded by the action of the virus, this latter acts directly, and explains some cases of supposed incubation.

In our investigations we have not met with a single case which would seem to contradict the general law we have attempted to establish, namely, that abrasion of the epithelium or epidermis is necessary for the action of the virus; some authors differ in this opinion, considering that simple contact of the skin and virus is alone sufficient for the development of a chancre. In these last cases, the virus might probably act as an irritant or escharotic, and destroy the surface; the virus would then come in contact with the cellular tissue, and such cases, far from contradicting, prove the proposition we have above laid down. There are other cases which, interpreted in a different manner, might lead to the supposition that syphilis may be introduced into the system without any abrasion of surface. Chancre may heal in a few days, as we have elsewhere stated; the virus may introduce itself into a follicle or point of the skin, and the follicle become closed, or the point by which it was introduced perfectly heal in a short time; in none of these cases abrasion of surface will be apparent, yet chancre will become developed, giving rise to the opinion that lesion of continuity is not necessary.

We think we may with advantage here inquire, if there are any persons not susceptible of chancre? If we choose to depend upon the opinion of some authors, as well as some men of the world, there exist certain privileged beings who are not susceptible of syphilis.

It is a fact, founded on experience, that *some few* persons pass through life without contracting chancre, although they have exposed themselves to contagion. Such persons do not present the accessory conditions we have just spoken of; thus the virus did not remain long enough on the epidermis to destroy it and act on the cellular tissue below. If it be the case of a female, the vagina was probably coated with thick mucus, which prevented the contact of the virus, or it was inflamed; and experience shows that an inflamed and secreting surface will take on with difficulty the specific action of chancre; the same occurs on a blistered surface, the secretion appears to wash the virus away. If, then, any part covered with a perfectly healthy and compact epidermis be exposed to contagion, why should we be surprised at finding it unaffected? this fact also proves the correctness of our opinion. But we can not agree with those who believe that there are individuals who resist the action of chancre; we would undertake to produce a genuine chancre on any individual who will submit to inoculation; the *privileged few* will then find that they have previously escaped contagion from one of the circumstances above mentioned.

When the virus is taken from a sore under conditions before described, and transmitted by means of any of the agents mentioned, and lastly, brought into contact with the tissues under the conditions above alluded to, the effects will be regular and constant, and the point of the skin with which the virus comes

in contact will be the seat of the chancre; its development will, moreover, as seen in Plate IV., fig. 1, *a, b, c*, begin immediately, so that no incubation can be said to occur. In practice, however, cases happen which apparently contradict these statements, and which are believed by some persons to prove the existence of incubation. Patients sometimes state that a chancre has only existed a week, and yet they have not exposed themselves to contagion for a month previously. Here the patient makes a wrong statement, although without any intention of deceiving the surgeon; for on closer examination it will be often found that he has, from inadvertence or other cause, never examined the affected part since the time of exposure to contagion, until the period when pain or some other symptom first called his attention to the chancre. In such a case it would be, perhaps, more correct to say that he observed the chancre a week ago, than that the sore had only existed for that period. How often have we been called on to treat *bubo*, or even secondary symptoms, when, interrogating the patient, he affirms he has never had primary sores; yet, on uncovering the glands, we have shown him sores which he never observed, and was not cognizant of, inasmuch as they had given rise to no inconvenience.

There are, however, other cases which are brought forward to prove, and which at first sight seem to indicate, incubation. Persons expose themselves to contagion; they wash carefully the parts exposed, they examine day by day, to see if chancres are produced. When several days have elapsed, they observe certain suspicious-looking pimples; here, however, we may naturally suppose that the virus has entered, during coition, the mucous or sebaceous follicle, and lies there inert until, by the irritation it produces, destruction of the lining membrane takes place; it is then placed under conditions most favorable for its development; very probably this often occurs in urethral chancre, as experience shows that a secretion from the canal rarely occurs before the fifteenth day.

Far from believing, then, in the existence of incubation, properly so called, we consider that immediately the morbid poison comes in contact with the cellular tissue a local action is set up, by which "it (the virus) converts into its own likeness those appropriate materials of the blood which come in contact with it; but this action is apparently limited, and at last arrested and reversed, by a disposition inherent in the virus to enter into some new union, or to reciprocate some new modification with other ingredients of the blood; by which union or modification it attains a second form, wherein (whether by addition or by subtraction of matter) it comes to possess new qualities; *solubility* which it had not before, and an *inability to propagate itself by inoculation* from the surfaces at which (judging by analogy) we may suppose that it discharges itself. In becoming a true blood-disease, it ceases to be communicable except by what is equivalent to *transfusion of blood*."^{*}

The foregoing conclusions on the subject of inoculation of syphilitic virus have met with much opposition in France, and among others, M. Bousquet, who has given much attention to the subject of variola, is impressed with the idea, that the first effect of the syphilitic virus on the system is general, similar, as he states, to that of the vaccine virus, and not local, as we believe. Now, supposing that the primary effect of vaccine virus on the system to be such as M. Bousquet, asserts (which, as seen by Dr. Gregory's note,† is not generally admitted),

* *Simon's Lectures on Patho'logy*, p. 266: a book which furnishes a very able summary on all that is at present known on the action of morbid poisons.

† "6, CAMDEN SQUARE, CAMDEN TOWN, Dec 31, 1850.

"DEAR SIR: You have submitted to me certain opinions entertained by M. Ricord and M. Bousquet, on the subject of the imbibition or reception of morbid poison, particularly on the question, whether 'a nascent chancre is at its outset a purely local disease?'

"M. Bousquet, I believe, contends, in opposition to M. Ricord, 'that chancre is not necessarily a local complaint,' and he likens its action to that of the vaccine virus, which, according to M. Bousquet,

it by no means follows that other morbid poisons act in the same way; on the contrary, everything tends to prove that each morbid poison has laws of its own; the very valuable remarks of Dr. Gregory clearly show what those of the vaccine virus are. Recent observations at the veterinary college at Alfort, in France, on the subject of the inoculation of glanders, place this subject in so clear a light, that I shall append them.

M. Rinault found that when he inoculated horses with acute glanders, and incised and cauterized the surrounding part one hour after the inoculation, the animal subsequently died of glanders; showing the rapidity with which absorption takes place.

Similar experiments made with the sheep-pox virus proved that in less than

'has first a general effect on the whole system, the local phenomena following this general disturbance.' You ask my opinion on the question at issue between M. Ricord and M. Bousquet. You ask me: *'whether, in my opinion, the vaccine matter acts generally before producing its local manifestation?'*

"I will attempt to make the matter clear to you.

"M. Bousquet is perfectly correct in his opinion, that the *'local manifestation bears a certain relation to the condition of the general system,'* but in my judgment he is wrong in saying, that the vaccine virus *'acts on the general system first, and produces its local manifestations afterward.'*

"The action of the vaccine virus is purely *local*. It commences the very instant that the virus comes in contact with the wounded chorion. From that moment a new and specific action of vessels is set up, the further advances of which are controlled and regulated by the previously-existing condition of body. The error of M. Bousquet is, perhaps, after all, more in the mode of expressing his thought than in the thought itself. We probably both mean the same thing. In my view it is not the virus that acts on the general system. It is the general condition of the frame which acts on, or more correctly, influences the action of the vessels when touched by the vaccine virus. It would be nearer the truth to say that the prior condition of the frame affects the vaccine virus. Neither expression, however, is correct. The proposition, duly enunciated, would read as follows: The vessels, irritated by the contact of the vaccine virus, instantly take on an action, which action is controlled, influenced, modified, and governed, by the previous condition of the frame.

"When the healthy *infantile* arm is punctured in vaccination, the action of the vessels is slow, steady, and uniform, and the result we call *'perfect vesicles.'*

"When a youth of fourteen, well vaccinated in infancy, is revaccinated, the action taken on by the wounded vessels of the arm is hurried, unsteady, and irregular. The offending matter is ejected from the body by a rapid process of common inflammation.

"If a child be vaccinated whose blood has been already tainted by small-pox received naturally, then, in most cases, the action of the wounded vessels progresses as under the common case of *infantile vaccination*. The process is slow and steady: pure vaccine vesicles are developed, and these vaccine vesicles give forth a lymph which will serve to *vaccinate others*, even though the rest of the body be covered with variolous pustules.

"This latter case is an *experimentum crucis*. It can not be contended that here the vaccine virus *'has had any general effect on the whole system, prior to developing its local manifestations,'* for the system was preoccupied by variola. Yet the local manifestations are identical with those which show themselves where the system is not so pre-occupied.

"When a child is vaccinated whose system is pre-occupied by the rubeculous poison, the vaccine virus occasions an *incipient action* in the wounded vessels, but the action does not progress and complete itself till after the subsidence of the rubeculous tumult.

"The same principle is displayed in operation, when you *variolate* a young lad of fourteen, who had been well vaccinated in infancy. The local injury being received, and the condition of the frame being *anti-variolous*, the newly introduced poison is ejected from the system by a rapid process of inflammation and suppuration, just as a thorn or a swan shot would be ejected. But the swan-shot does not *act on the general constitution before the development of inflammation*; neither does the variolous poison so act. The condition of the frame regulates the action of the vessel, and the condition was equally present before the skin was wounded. *The virus, then, acts locally on vessels in a particular condition of vitality.*

"This pathological inquiry has been unnecessarily complicated by the question, whether the morbid matter (be it chancre, be it vaccine) is actually absorbed, bodily, into the system.

"The latter question is a purely speculative one, nor do I know how we can ever arrive at its solution. The theory of *'absorption of morbid matter'* is not requisite to explain the phenomena. The development of the vaccine pustule is not prevented by the most profuse bleeding of the wounded vessels. It is not prevented by the use of the cupping-glass applied over the wounded surface. It is not prevented by the most diligent ablation. The vessels having been once touched by the most minute homopathic fraction of a drop of pure vaccine virus, the process must go on; nothing can stop it but the destruction of the part, or the death of the child.

"I have thus endeavored to show you what is the mode (so far as is known to us) in which the vaccine virus acts on the human body. You see how the phenomena are influenced by the prior condition of the constitution. But it surely can not be said, with any reason, that *'the vaccine virus has a general effect on the whole system before producing its local manifestations'* (such is the expression of M. Bousquet). The vaccine virus can not *act on that, or influence that,* which existed previously. The prior condition of the system, and consequently of the vessels of the arm (constituting a portion of the general system), influences the course of the vaccine disease, but the action of the virus itself is *local*.

"Believe me, very truly yours,

"GEORGE GREGORY."

"To W. Acton, Esq.

five minutes absorption had taken place, when the poison had been brought in contact with any absorbent surface of the skin.—*Recueil de Medicine Veterinaire*, 1849.

We must therefore again repeat that syphilitic virus produces its special effects on the human system; these effects may be in many respects similar, but by no means identical with those of other morbid poisons; it has its own special laws which we have attempted to demonstrate, as a knowledge of them is most important in practice, and will assist greatly in unravelling many of those mysteries which are supposed to hang over the subject of this work.

INOCULATION CONSIDERED IN REFERENCE TO ITS OBJECTS.—Every candid observer must admit that inoculation has rendered infinite service to science, and the thanks of the whole community, are largely due to M. Ricord, not only for performing that long series of experiments recorded in his “*Traite Pratique sur l’Inoculation*,” but for drawing those important deductions we have been alluding to; inoculation, however, like many other useful agents, is a very dangerous weapon in the hands of the unskilful. Eleven years ago, in the pages of the *Lancet* (vol. i., 1839–40), I introduced the subject of inoculation to the attention of its readers, and in pointing out the advantages of the practice, noticed at some length the inconvenience to which it was liable. I regret to say that similar remarks are as necessary now as they were then. Scarcely a week passes but patients are brought to me on whom I see the evil results from employing inoculation for purposes which are quite useless, or only indulged in from idle curiosity. This particularly happens in the case of medical students experimenting on themselves; happily no ill consequences have arisen, further than prolonging the complaint, and giving themselves much unnecessary suffering. But let me advise those who practise inoculation to read the following remarks.

DESTRUCTION OF THE PUSTULE.—Inoculation is a very simple process, and is attended with no ill consequences, provided the sore from which the virus is taken is a simple one, and the patient is confined to bed, as happens in the wards of an hospital. On the third or fifth day, when the surgeon has gained all the information he wants, namely, whether the sore from which the virus is taken is a true chancre, let the little pustules be opened with a lancet, the pus removed by lint rolled into a point, carefully and effectually, and then let the little cavity be filled with Vienna paste, composed of five parts of caustic lime and six of caustic potash; a watch-glass may be placed on this to protect it, or, when dry, a piece of strapping; a little eschar forms, and when this comes away, the structures beneath are seen perfectly healed, or a very small healthy wound remains, which cicatrizes most rapidly; in all these cases however the patient should take no violent exercise, nor commit excesses.

THE CASES IN WHICH INOCULATION IS JUSTIFIABLE are the following. A clinical lecturer is anxious to show his pupils the natural course of syphilis and the laws of that poison; by taking the precautions above alluded to, he may do so with great benefit to his class, and without the slightest detriment to the patient’s health; in fact, the inoculated point will be generally healed before the original sore; the local mischief will not be increased; *bubo* is not more frequent; and, lastly, constitutional symptoms are not to be feared, any more because a patient has had two sores, than if he had only one; experience having clearly shown, and, as I shall demonstrate at a later period, that secondary symptoms depend in no manner on the number of sores on a patient. I would urge the clinical lecturer then to allow his pupils to study inoculation, not on every case, but every now and then; but always with the precautions above spoken of; science, as well as the patient, will benefit by this proceeding.*

* M. Ricord, in excising the edges of a primary sore with a curved pair of scissors, wounded himself in the thumb of the left hand. An ill-conditioned wound followed. To decide its nature, he in-

When the urethra discharges a small quantity of thin sanious secretion, or if the surgeon has reason to suspect an urethral chancre, inoculation is not only justifiable, but absolutely necessary, provided the surgeon wishes to treat the case properly; for if urethral chancre exists, as not unfrequently happens, all the anti-bleunorrhagics in the pharmacopœia will be of no avail.

In many medico-legal inquiries I would suggest inoculation to the surgeon, before giving an opinion on the nature of a sore; before going into a witness-box, it is impossible to say what inquiries may be made, and a clever counsel might be able to make a strong case unless this were done.

In instances of suspicion, or in cases where nasty-looking sores occur in unusual places,* and resist ordinary treatment, I never have any hesitation in inoculating a patient. The two following instances will suffice to show that cases requiring it occur, and as they have been already published in my paper alluded to above, I will not add others: "On the 27th of Feb., 1838, a man presented himself at the out-patient room, complaining of chancre at the root of the penis, and accidentally, as it were, showed M. Ricord a sore on the frænum of the tongue. The character of it was sufficient at once to arouse some suspicion as to its nature, and this patient was immediately admitted. Inoculation of the secretion on the sore in the mouth was made, and a characteristic pustule followed. All doubt was soon removed, and the avowal of the patient additionally proved that this was a primitive syphilitic ulceration."

"A woman at the Female Venereal hospital presented ulcerations around the rectum, *the genital organs being in a healthy state*. Here, as in the former case, inoculation proved that the sores were primitive ones, and it was the cause of the avowal of the patient as to the manner in which they had been contracted, after every other means had failed of obtaining a confession. Without inoculation, it would have been impossible to have arrived at a correct knowledge of the cause of the ulcerations on the leg, the history of which is detailed under the head of Diagnosis of Chancre."

The above are, I think, the only instances in which inoculation is advisable or can be sanctioned. I will now shortly allude to

CASES IN WHICH INOCULATION OUGHT NOT TO BE EMPLOYED.—It appears to be pretty generally acknowledged by all, that the younger members of our profession devote themselves as martyrs to science, more so than any other class of men. We have been accused of torturing animals unnecessarily, in order to investigate Nature's secrets; and the public sometimes asserts that public institutions are nothing but tolerated places where experiments are followed out on a large scale on the poor patients; but I should say that the junior branches of the profession lose no opportunity of experimenting on themselves or their comrades in a way that even science can not sanction.

The following case is frequently coming under my notice; a student, during his first year's studies, unhappily contracts a sore from a party he has the greatest reliance on; to prove her fidelity, and disprove to his comrades, or the surgeon he consults, that all their suspicions are incorrect, he inoculates himself on the thigh, attends to his usual avocations, and takes no precautions; in a week the sore on the genital organs has increased, and, in addition, he presents a spreading sore on the thigh. His belief now becomes staggered when it is inoculated himself, and produced the characteristic pustule.—*Bulletin de L'Academie Royale de Medicine*, tome ix., page 142.

* Dr. McCarthy, in his Thesis, says, page 13: "During the years 1842 and '43, I had occasion to observe a great number of primary ulcers situated on parts of the body where they are not usually met with.

On the nostril.....	1	On the umbilicus.....	2
On the gums.....	1	On the scrotum.....	2
On the tongue.....	1	On the anus.....	15
On the lips.....	3	On the urethra	17
On the chin.....	2	On the thigh.....	3"
On the hand.....	4		

too late, and he complains of inoculation ; happily, however, in the case of the student, a few days' rest and appropriate treatment bring all right again, and he becomes a wiser man.

Having given this hint to the junior members of the profession, I would attempt to overturn a very prevalent notion, that inoculation is a valuable means of deciding whether mercury should be given. Now M. Ricord, the modern regenerator of inoculation, has never advanced that the process is of any use in deciding this matter. Whether a sore produces a characteristic pustule or not when inoculated, causes us in no respect to vary the treatment ; the giving or withholding mercury will depend upon totally different reasons, as will be stated in the proper place.

Let no man state, as a reason for inoculating a patient, that he is desirous of knowing whether he should give mercury : no greater error can be committed, and I mention it here, because some leading surgeons in London labor under this false impression.

Inoculation must never under circumstances be employed in gangrenous or serpiginous sores (a subject to be alluded to presently), on the ground that, as almost all sores on the same individual will take on a similar action, the surgeon will have to treat two intractable sores instead of one, which may last for years ; besides, in such cases there can be no doubtful question to decide, and inoculation, if performed, is of no avail. In the *Lancet*, vol. i., for 1839-'40, will be found instances of the deplorable effects ; and M. Ricord, in Plate III. of his "Iconographique," gives a drawing to the same effect.

Lastly, the young surgeon must recollect that in testing a sore, to ascertain if it is syphilitic or not, such test is only of value when the sore is in the condition described (at page 242) as specific or progressive, where the statistics are given of a number of cases which did not succeed, from these circumstances being unattended to.

IS THERE ONLY ONE VIRUS, OR IS THERE A PLURALITY ?—We have, in the preceding sections, spoken of one cause alone, and we have studied the conditions necessary for the action of that cause ; we have spoken of it as constant in its effects when placed under the proper conditions for its development. If syphilitic virus always followed the simple course above alluded to, chancre would be a very simple, straightforward disease. Experience and experiments, on the contrary, oblige us to acknowledge that, although we meet with cases which fully bear out the description above given, the majority of cases present complication, and are modified by circumstances hereafter to be stated, that make us almost forget the principles we have learned, and at once explain the contradictory statements and opinions which have existed on the subject.

The same number of experiments have not, of course, been made on the varieties of chancre, but still, sufficient have been instituted to show some of its laws. If syphilitic virus be taken from a patient's sore that has been much irritated by any local circumstances, the pustule may go through all the regular phases, provided the inoculated point is not irritated. This is well exemplified in Observation I., Plate I., of M. Ricord's valuable "*Clinique Iconographique*." As the learned professor observes, "This fact [namely, the regular progress of the inoculation] is very remarkable, inasmuch as it shows that an erysipelatous state of the genital organs is but the local result of ill treatment, had recourse to previous to the entrance of the patient into the hospital."

If the reader will turn to Observation III., Plate III., of the above-mentioned work, he will observe the irregular results of inoculation delineated. Thus a patient came into hospital with chancres of the glans and prepuce ; phymosis and acute inflammation following a two days' march, and a free indulgence in spirits. Instead of going through the natural phases, the inoculated point in half an hour seemed to have taken on a more active course than usual. In

twenty-four hours, under the influence of the general excitement, a pustule had formed, in the centre of which a dark-brown spot was observed, indicating that already partial mortification had commenced. At this period likewise superficial gangrene had attacked the sores on the prepuce, from which the virus was taken. At the end of the thirtieth hour after inoculation, the brown spot which occupied the centre of the inoculated pustule became of a perfectly dark color; the epidermis, which had been raised up by the accumulation of the pus, presenting a grayish hue. At the forty-eighth hour, the elements of the pustule extended themselves simultaneously. On the third morning, similar progress; the central eschar of the pustule was observed to be less elevated than the surrounding parts. On the fourth morning, the pustule was observed torn across in several places, but the centre was adherent. On the fifth day, at ten o'clock in the morning, the black scab covering the ulcer produced by the inoculation was removed, and the skin alone was seen to be compromised: there was but little burrowing under it, and the bottom presented a pink appearance, interspersed with yellow points, and the patient rapidly recovered.

Let it be remembered that these patients, during the course of the experiments, were confined to bed, and every attention paid to their diet and cleanliness: so here, again, we see the simple course of a *variety* of chancre. I could enlarge greatly on this subject, and detail a vast number of experiments which might be very interesting, but which all go to prove what surgeons are otherwise well aware of, namely, that chancres *on the same individual* usually present similar physical characters. Thus an indurated chancre and a sloughing phagedænic sore are not met with on the same patient; that if several chancres exist, they are usually all either simple, indurated, phagedænic, &c. We say usually, for when the situation of a sore causes it to put on a peculiar aspect, of course the inoculated point on the thigh, not influenced by similar causes, will not exactly resemble the sore whence it was derived.

Scrapes which can not be too much admired have prevented M. Ricord from inoculating one person with the secretion of a sore from another; we have been thus unable, by direct experiment, to deny that an indurated sore will produce its fellow, or that a phagedænic sore will cause a phagedænic ulcer in another constitution; but although we have been unable to solve this question by direct experiment, observation has satisfactorily shown that the characters of sores do not depend upon the source from which the virus is derived. Need we cite the celebrated case, detailed by Dr. Ferguson, of a young officer who suffered from a most severe form of phagedænic ulcer contracted from a Portuguese opera-dancer, who continued upon the stage for many months afterward, occasionally infecting others, without presenting anything extraordinary in the nature of her own symptoms?

This fact has been lately further substantiated in Paris. M. Vidal de Cassis took the secretion from the sore of a patient (which sore was unindurated) and inoculated a healthy pupil: the inoculated point in the pupil took on an indurated character, and the young man suffered most severely.

In another case, Dr. De Weltz was inoculated from the monkey, as detailed at page 239, and the inoculated point did not become indurated, neither was the sore indurated in the person from whom the pus was taken when the monkey was inoculated.

We were acquainted with three students who had connection with the same *grisette* during one evening. One was affected with a phagedænic sore; the other was a long time recovering from an indurated chancre; the third had a simple excoriation, which was slighter than that which we had witnessed on the genital organs of the female, whom we had examined a few nights after the debauch.

Private practice enables a surgeon to settle this matter most satisfactorily;

he can trace the sort of sores in many of his patients, and the result of nearly all recorded experience is, that a particular ulcer does not produce a similar sore in the individual from whom the disease has been contracted. This is now so generally allowed, that a modern author may almost take it for granted as a generally-admitted fact, *that one virus only exists*, which is modified according to the state of system of the individual who contracts the disease ; that the more or less concentrated condition of the virus, or the source from which it comes, may render it powerless or incapable of acting, but that neither one nor the other has any influence in producing the varieties hereafter to be described. These depend upon the state of the constitution, and I am happy to find, in Mr. Carmichael's "Clinical Lectures," page 12, the following phrase : "I am willing to admit that both primary and secondary symptoms may be greatly modified by age, constitution, mode of living, and treatment, both local and general ;" and I think that, had that able surgeon lived, he might have still further modified his opinions, particularly as (at page 19) he goes on to state : "For, as I before observed, in a practical point of view it is of little consequence whether there is but one or several distinct poisons, so that we are acquainted with the different forms which it or they present, as our treatment or prognosis of the event will or ought to hinge upon these very forms."*

Let us, then, take it thus as clearly proved, and answer the question placed at the head of this paragraph, that there is but one cause of chancre, however that may be modified by circumstances. The constitutions of individuals, like that of society, vary much ; and in proportion as one or other is in a perfectly healthy state, so will the virulence of the disease diminish or increase. I believe it impossible, as society is at present constituted, that we can ever see a return of the epidemic of the fifteenth century ; but I see no reason to doubt, that if the mass of the present population consisted of bargemen, sailors, and low prostitutes, the disease would assume much of the virulence it showed at that period.

SECTION II.

SIMPLE UNCOMPLICATED CHANCRE.

HITHERTO we have studied the laws of syphilis by means of artificial chancre. Daily experience, however (benefited by the knowledge artificial inoculation has enabled us to attain), proves that simple chancre does not follow the exact course we have been laying down, but presents peculiarities which it will be my object to notice in the present section.

COURSE AND TERMINATION.—There is scarcely any part of the skin or mucous membrane which I have not seen the seat of chancre ; but the frequent exposure of the delicate membranous covering of the genital organs, as well as the number of follicles it contains and the difficulty of completely examining them, render these parts most liable to the complaint. A chancre, in virtue of being seated on the organs of generation, presents nothing more peculiar than if it had been seated on the eyelid or tongue. Accidental circumstances, such as friction, &c., may modify it ; but erethismus, erection, or intense vitality of the part, influence it in no way that we are aware.

Chancre is most frequently contracted in connection, but coition is by no

* As I avoid controversial points as much as possible, particularly those not having any practical bearing, I have not entered into detail upon the question of variety of poisons. I would refer those desirous of further arguments for a variety of poisons to Mr. Carmichael's "Clinical Lectures," where he supports his opinion at great length. Those desirous of hearing the other side of the question, I would refer to Mr. Wallace's excellent treatise on the venereal disease.

means necessary : as the profession have frequently proved, to their cost, that chancre may attack the finger of the surgeon who operates on the pauper vagrant laboring under the disease. Generally abrasion of the skin, or some lesion of continuity, is necessary before the poison can act, or, as Dr. Gregory (see page 247) would say, before the constitution would act on it. Many persons have connection with females laboring under chancre, and escape. This apparent immunity arises from the fact that the fortunate individual has a firm, tough, entire skin ; and there are many dissipated characters who boast in the nineteenth, as they did in the fifteenth century, that they are syphilis-proof. True it is that they may escape in numerous instances, but the cause is apparent, and the slightest abrasion occurring, all this fancied immunity vanishes. I have known persons in the French hospitals state that they would allow syphilitic virus, to be placed on a portion of healthy skin a certain time and dare the consequences ; but I never witnessed any experiments to show how long the virus may remain in contact without producing its effects. In practice, however, we have reason to know that virus will (and must in many instances) have remained a long time in contact with healthy skin, and no effects have been produced until corrosion of the epidermis has taken place, or imbibition or reception into the system has occurred, and then we see the effect immediately follow. The virus may enter or be forced into the follicles of the skin, and we have reason to think that it may remain a certain period under the same conditions as if on the surface of the skin ; no sooner, however, has the lining membrane of these follicles been destroyed, than the local action commences. It has been stated that the virus may enter the system without local abrasion. It would be difficult to deny or altogether prove such a position ; for who can say that the epidermis was intact ? And it is well known that the smallest puncture only is necessary for the introduction, so we will not dispute about a question that is of no great practical importance. Suffice for the surgeon to know that the virus may remain in contact with the skin and not act ; but that, immediately it is placed beneath it, the action is excited, which nothing will stop but cauterization, or entire destruction of the point.

The most simple way in which chancre commences is the deposition of virus on the surface of the skin. Wallace, who of all authors seems to have paid the most attention to this subject, states that action commences from the third to the seventh day, but no doubt can exist that a longer period may exist previous to action.*

Sometimes a thin scab is seen on the surface, sometimes a pustule ; in other instances, the first evidence we have is a little ulcer ; but on the skin, we are rarely called on to treat ulcers in the early stages, as their surface soon dries, leaving a scab ; sometimes the matter burrows underneath and makes an abscess, or the complaint puts on all the character of a boil. In private practice, however, these forms of disease are very uncommon ; in fact, chancre on the skin of the genital organs is rare, for, provided cleanliness and plenty of soap-and-water be employed, such results are unlikely to happen.

The principal exception to the rule is in persons who have a long, narrow prepuce : we then find chancres commencing at the orifice as so many little cracks or linear chancres, which appear in the folds of the prepuce, very different from that oval or rounded shape that chancre usually assumes in its early stages. If a poultice or water-dressing be applied to all of these forms of chancres, the crusts fall off, and then we have a more or less circular sore of the thickness of the skin, with serrated edges, a little thickening of the surrounding tissue, and the bottom of the ulcer covered with a chamois-leather looking secretion, which is very tenacious ; the areola is of a bright color ; in

* Wallace on Venereal, p. 65, et seq.

fact, it resembles as closely as possible artificial chancre. I might dwell at considerable length on a variety of little details which are of no great practical value, but to those desirous of further studying the matter, I would refer to Wallace's book, page 65, who has paid great attention to details, that subsequent experience has not proved of any great practical value.

Chancres on mucous membranes, or on parts which are covered with membrane that is constantly moistened, usually commence at once as little excoriations or ulcers, which may be isolated or coalesce, forming one circular, or portions of a circular sore, and then assume all the characters of a chancre mentioned above, to which water-dressing has been applied. In some instances, tiny pustules make their appearance, as in Plate IV., fig. 3, coalesce, burst, and form a regular open sore, secreting little, but this secretion is capable of producing the same series of phenomena we have been describing, under the head of Artificial Chancre.

From this period all superficial chancres (on whatever part of the body they are situated) have a slight tendency to increase by ulceration of their margin; they then become stationary, still secreting the virus, but (if not interfered with) producing little mischief. After a time this *statu quo* ceases, and the chancre fails to secrete virus, little rose-granulations take the place of the chamois-leather looking tenacious membrane at the bottom of the sore, and cicatrization follows, although a discolored mark, like that following vaccination, will remain for a long time.

Such is the natural course of chancre, when reduced to its greatest simplicity, and disengaged from its complications; but there is no period of its development, *statu quo*, or reparative stage, during which it may not undergo very considerable modifications, as will be hereafter shown under the head of Varieties of Chancres.

THE DIAGNOSIS.—In describing artificial chancre (considered in reference to its chemical, physical, and microscopical characters, as well as the local effects produced on the economy when the secretion is introduced into the system), we have given the diagnosis of chancre. But it may not be uninteresting to consider practically the subject, and allude to such cases as present difficulties. A case is presented to our observation at its origin; that is to say, we are consulted for a pustule, a small abscess, or an excoriation, such as is seen in Plate IV., figs. 1 and 2. How is a correct diagnosis to be formed in this case? A rational diagnosis may often be founded on the appearance, situation, history, and course of this stage of chancre, but let it be borne in mind, that such an opinion can only be conjectural. The value to be attached to each circumstance we shall consider in detail.

The Appearance.—It is a fact that no one who has seen much of venereal disease can contest, that a primary sore presents characters which are very striking, and there are many surgeons who rely much upon the appearance of a sore in forming an opinion on its nature. This opinion will be corroborated on referring to Plate IV., figs. 1 and 3, with its accompanying description. But though a primary syphilitic sore has generally a peculiar physiognomy, still it is uncontested that other sores not of a specific nature may assume all the aspect of real chancres. If, for instance, a piece of corrosive sublimate be placed between the glans and the prepuce, a sore, in every physical character resembling chancre, will follow; hence we conclude that the appearance of the chancre is only of relative value in the diagnosis. Still there is a honey-combed appearance of chancre which when present is very characteristic.

In further illustration of the difficulty which attends the diagnosis, when a surgeon judges of a sore from its appearance, I may mention that many of the most eminent men in our profession, in both England and France, differ in opinion upon the diagnosis of the disease represented in Plate IV., fig. 3. Several

of those to whom I have submitted it say, "Your diagnostic sign of inoculation was unnecessary; we should have judged it syphilitic from its appearance." I have met with many who have stated the contrary, and ridiculed the notion of chancres existing on the leg. "These sores are chronic ones, such as you may see in my hospital any day," said a learned surgeon, lately, when I showed him the original drawings.

If, however, a primitive sore usually assumes the characters above mentioned, it is no less certain that in some few instances it presents no peculiar features, yet it is no less a chancre. Thus, then, the mere presence or absence of certain appearances can not alone enable us to decide upon its nature.

The Situation.—As inoculation has proved that chancres may occur on any part of the skin or mucous membrane, the mere situation of a sore will in no way assist our diagnosis, unless as urging us to examine more carefully those parts which are most likely to conceal them from our view, such as the deep portions of the vagina; uterus, urethra, rectum, mouth, &c.

The History of the Sore.—If there is any one circumstance which has led, or leads, surgeons frequently to form a false diagnosis, it is the history. Thus, supposing that a patient avows that he has exposed himself to infection, and a sore follows, the simple fact of exposure only gives presumptive evidence that a sore is syphilitic, inasmuch as this sore may have been produced by simple irritation, or by abrasion. It is not sufficient to know that connection has preceded, but it is likewise necessary that a reasonable time only has elapsed between the act of coition and the real, not the reputed, appearance of the sore.

The surgeon, on the other hand, must not be deterred from believing a sore syphilitic, because the patient denies the possibility of having contracted a chancre; such a mere *ipse dixit* is of no value alone, unless backed with other corroborative evidence.

The History, then, like the Situation, Aspect, &c., is, alone, insufficient to found a diagnosis on; but if it is deceitful when the patient is desirous of telling the truth, how often may the surgeon be misled when the patient has reason for concealing his antecedents? In the female it is next to impossible ever to attain the truth. The irritation of the menses, or some other cause, is alleged to explain the ulcerations about the genital organs. We have mentioned at page 249, the case of a female who suffered under ulcerations around the rectum, yet at first strenuously denied that they could possibly be syphilitic, until obliged by inoculation to admit the fact. We might cite numerous cases to prove that an absolute reliance can not be placed on the history of patients.

The Shape of a Sore has been cited by some authors as a diagnostic mark of syphilis, and it is true that a chancre has more or less a circular or oval form; but then this it possesses in common with many other ulcers, particularly those resulting from herpes. In chancre the ulceration may be linear, as in those situated at the orifice of the prepuce or at the margin of the rectum.

Various Complications.—It may be true that buboes occurring with sores are *prima facie* evidence of their being syphilitic. But we should recollect that any simple irritation in scrofulous habits will give rise to them, and perhaps such buboes are more difficult to treat than any others. Similar observations may be made on other complications. In fine, we may state, that these circumstances, when present, can only furnish a rational diagnosis.

The Course.—It has been remarked that chancre has little tendency to heal, but, on the contrary, gradually progresses; these are, however, characters not peculiar to chancres. There are various sores, which, in scrofulous and scorbutic constitutions, spread rapidly and heal very slowly. On the other hand, some true syphilitic sores heal in twenty hours; but it is no less certain, that although such exist, they are of rare occurrence.

When these characters are absent, it by no means follows that the sores are

not syphilitic, and it is from the *ensemble*, and the greater or less probability, that a rational diagnosis must be formed.

Before quitting the subject of diagnosis, I must say a few words on cancer; these two affections have some points of analogy as they may exist on the same portion of the body; and it may assist the surgeon, if he recollects that happily cancer is a very rare disease, its progress is very slow, glands in the groin become affected late in the disease, and the symptoms aggravated in proportion to the duration of the complaint; exposure to contagion may or may not have occurred.

In a case of very severe warts, which I treated lately with Vienna paste, in a gentleman from the country, ulcerations followed the cauterization; and these ulcers had a great tendency to remain in *statu quo*, although they ultimately healed; in this instance I had great fear that the ulcers, which exactly resembled chancres, might have become inoculated by some inadvertency, or that they would degenerate into cancer. I mention the circumstance to show the difficulty of diagnosis in some cases, which time alone can clear up, unless we employ inoculation. In obscure cases, and when it is absolutely necessary to decide upon the nature of a sore, more especially in medico-legal inquiries, evidence such as we have mentioned would be insufficient. In the Gazette des Hopitaux, 1847, page 295, M. Ricord says: "The characters of chancre exist neither in the situation, form, color, nor induration of the sore, neither do they exist in the shape, edges, duration, nor in any one physical character of the ulceration, which may vary *ad infinitum*. They exist entirely in its inoculable pus—in its secretion, which is always identical at a given period of the existence of chancre; this however will not prevent us frequently forming a rational diagnosis from the appearance of the sore." There remains, then, *inoculation*, which, although one of its greatest advocates, I would not unnecessarily employ; it will, however, at once decide the nature of a sore. Here, neither ignorance nor deception on the part of the patient, nor want of experience or observation and deduction on the surgeon's part, will interfere with the conclusion. The accuracy of the test, the certainty of arriving at the truth, and the reputation of the surgeon, will counterbalance all objections to the operation.*

* The following case, taken from a paper I read before the Parisian Medical Society, shows the utility of inoculation:—

"In the bed No. 10, in the second ward of the Venereal hospital, lies a patient thirty-two years of age, a shoemaker by trade, of fair complexion. He states that from the age of thirteen till his eighteenth year he was liable to ulcers on various parts of his body, the cicatrices of which are still visible; from the last-mentioned period he has enjoyed good health. About fifteen months since a bubo appeared, which suppurated and healed in about six weeks.

"About five weeks ago the patient observed a chancre on the prepuce, four days after connection, soon afterward several chancres appeared around the corona glandis, and he consulted M. Ricord as an out patient. During the time he was following the treatment prescribed, a vesicular eruption made its appearance on the inner part of the left leg, which he distinctly remembers having scratched, and from that moment the sores began, and increased in size.

"Present state:—Chancres still exist on the penis, which discharge freely: on the inner part of the left leg there are twelve ulcerations of different sizes, but assuming all the characters of primitive syphilitic sores. Inoculation with the pus of these sores was made, and the characteristic pustule was produced. [See Plate IV., fig. 3, a.]

"This, then, instead of being a case of secondary syphilis, which was inoculable, is simply an eczema which was inoculated by the nails of the patient, soiled with the secretion of the primitive sore on the penis.

"A boy, fifteen years of age, of puny stature, lymphatic temperament, and not apparently arrived at the age of puberty, so slightly were the organs of generation developed, entered the seventh ward, suffering under an ulceration of a suspicious character in the left groin. He gave the following account of himself:—

"Had never had connection with any females, or frequented their society; about three weeks previously the sore appeared on the groin, but it could not be ascertained if it commenced as a bubo or a sore.

"As this sore presented all the character of chancre, except as to its history, inoculation of the secretion was performed, and a well-marked characteristic pustule followed. On these data the boy was interrogated more closely, and M. Ricord then found that he was in the habit of sleeping with a fellow-workman who presented chancres on the penis, which dated some weeks. Both parties denied any unnatural practices; and whether the virus dropping on the sheets inoculated the scratch previ-

PROGNOSIS.—In the definition of chancre, we have stated that at its commencement it is a local disease, and that it gives rise, under circumstances that will be fully detailed hereafter, to symptoms of general infection. We shall, then, in the following pages, consider the prognosis under two heads:—

I. The prognosis of chancre as a local disease.

II. The prognosis considered in reference to the probability of general and constitutional infection or secondary symptoms occurring.

I.—*Prognosis of Chancre as a Local Disease.*—In describing simple or artificial chancre, we have mentioned that in a good constitution it presents a regular course; beginning as a pustule, abscess, or excoriation, it becomes an ulcer; granulations are produced; cicatrization follows, and it heals perfectly without treatment, in a space of time which varies between *three and five weeks*: therefore we may unhesitatingly state that the prognosis of simple chancre is favorable.

In a practical treatise, however, it is not alone sufficient to state these general facts: the surgeon should consider the prognosis under a variety of points of view, for in practice he is daily called upon to decide on the prognosis of this or that form of chancre. It is to facilitate this, often difficult task, that we propose devoting the following pages, founded on the observation of a great number of cases.

What will be the probable duration of the chancre? Simple chancre, when left alone, usually heals in a space of time varying from three to five weeks; when properly treated, perfect cicatrization may be obtained in from eight to ten days; there are, however, circumstances which have great influence in regarding the cure—among others we may mention the *situation*: thus a chancre situated on the *frænum*, or margin of the prepuce, when a natural phymosis exists, will be prevented from healing by the rupture of the cicatrix when erection occurs. Chancres in the urethra, bathed as they constantly are by the urine, or when situated at the margin of the anus, or within it, will be so irritated by the distension of the gut, during the passing of faeces, that cicatrization will be often unusually retarded. Other instances might be given to show that the situation of simple chancre must influence the prognosis.

The Size of Simple Chancre must necessarily modify our prognosis, as to its duration; for a large surface generally requires a longer time to cicatrize than a small one; yet large ulcerations sometimes heal as quickly as small.

The Number of Chancres might be supposed to influence the prognosis, yet practice teaches the contrary. Patients presenting several chancres are as speedily cured as those who have but one sore: cicatrization going on with equal rapidity in all.

What renders the occurrence of successive accidents probable?* “Successive accidents,” says M. Ricord, in his Treatise on Inoculation, “are a consequence of the extension of the disease (*de proche en proche*), or a simple extension of the primitive local symptom, as, for instance, the production of new chancres, simple or virulent abscesses, virulent or simple adenitis, &c.”

Is a bubo likely to follow? This is a question which the patient suffering only existing, or whether a scrophulous bubo preceded, which was contaminated with the contagions principle, it is not my object here to inquire; but I cite this case to prove that without inoculation the case would have remained very obscure.”—*Lancet, l. c.*, pp. 354, 533.

* By successive accidents, we mean such affections as are only a gradual continuation of the same disease, for instance the production of new chancres, the development of sympathetic buboes or abscesses, from extension of inflammation, and the occurrence of symptomatic buboes produced by the transport of the syphilitic virus.

Whenever, then, the secretion of a chancre is retained in contact with the tissues which secrete it, or comes in contact with such portions of the body as are susceptible of inoculation, we have reason to dread the formation of successive chancres; hence, chancres of the anus, of the prepuce where a natural phymosis exists, or of the *fourchette* in the female, often produce successive accidents. Besides, whenever a solution of continuity in the neighborhood of a chancre exists, subsequent sores are probable, from contact with the virulent secretion.

from a chancre often asks. Without entering at length into a discussion of all the causes which occasion the development of buboes, we shall here mention such as refer particularly to chancre. The mere existence of a simple chancre does not necessarily cause bubo; in the female, for instance, bubo is rare. We have never seen artificial chancre on the thigh, of the male or female, followed by them. But if chancre on particular parts are seldom followed by buboes, there are likewise other situations which exercise the greatest influence on their formation: it will be found that in every hundred men suffering under bubo, at least eighty have presented chancre around the frenum or inferior part of the glans or prepucce. When bubo occurs in the female, the chancre will be found most probably at or around the meatus. This fact, of situation of the chancre and occurrence of bubo, may be reasonably explained by the connection which exists between the part primarily affected and the gland, by means of a lymphatic vessel which carries the virus directly to it. And it also proves that the theory of exclusive venous absorption is not tenable: but it seems in accordance with the doctrine of imbibition.

The answer to our patient must then depend on the situation, not the size or the variety of the chancre; but we shall return to this subject under the head of bubo.

The tendency of buboes to follow chancre situated on or near the frenum, further shows the surgeon how cautious he should be in attributing buboes to this or that treatment; in all such calculations we should take into consideration the position of the sore.

We may here add, that bubo rarely follows any of the varieties of chancre, unless they be situated in one of these particular spots.

Does the treatment alter the prognosis? A simple uncomplicated chancre will heal without treatment in from three to five weeks, when properly treated, in eight or ten days—the varieties, by judicious management, in longer or shorter periods, depending upon the causes which give rise to them.

Is the chancre or sore contagious? To this the medical man should answer peremptorily, yes or no. By allowing connection, let the practitioner remember he is an accomplice, be it through ignorance of the consequences, or out of deference to his patient. Let him remember that a sore which is about to heal, or which has just cicatrized, is very liable, under the slightest irritation, to inflame, ulcerate, and present any of the varieties above described: thus, the patient may, by ignorance or imprudence lose the virile organ. On the other hand, who will state that a sore which is not perfectly cicatrized is incapable of transmitting the infection? It should not be forgotten that it is impossible to say how little virus is sufficient to infect an individual; the edge of a sore which is still unhealed *may* contain the quantum, and the sanction of the surgeon may lead to the greatest misery, as the infant may suffer for its parents' credulity, or from the surgeon's ignorance of the laws which regulate the secretion of the virus.

II. *Prognosis considered in Reference to the Probability of General and Constitutional Infection, or Secondary Symptoms.*

It is not our intention here to anticipate the interesting and important particulars to be hereafter detailed under the head of secondary symptoms; but there are some considerations which so directly relate to chancre and its prognosis, that we shall here consider them.

If it be an undoubted fact, that secondary symptoms are a direct consequence of chancre, it is no less certain that they do not in every case ensue. The following facts, drawn from observation, may perhaps assist the practitioner in giving an opinion on the greater or less probability of their occurrence.

1. *Stage of the Sore.*—When the chancre has proceeded beyond the vesicular form seen on the third day, we can never guaranty an absolute indemnity

from secondary syphilis; the constitutional symptoms may appear during the ulcerative or reparative stages, provided these last are retarded by any circumstance.

2. *Duration of the Chancre.*—As secondary symptoms are the consequence of chancre, it might be reasonably supposed, that the longer it lasts the more subject is the individual to their occurrence. This, absolutely speaking, is true, and is a reason for locally destroying the sore, which is a constant secreting nidus; but the practitioner will be wrong to suppose that secondary symptoms only follow chancres which have existed a long time. Experience proves that they attend chancres which have healed (without treatment) in a few days; and, on the other hand, we have witnessed cases of chancres which have existed eighteen months and two years, without producing these consequences.

3. *The Number and Size.*—The preceding observations apply equally to these circumstances; it is not on such data as these that we can alone found our appreciation of the prognosis.

4. *Situation of.*—Chancres on any part of the body, viz., on the mouth, finger, penis, or anus, &c., will be followed in an equal proportion by secondary symptoms.

If, however, secondary importance can only be placed on the stage, duration, size, number, and situation of primary sores in forming an opinion on the probable occurrence of general infection, the same does not hold good in reference to the *varieties*. Daily experience teaches us that the *serpiginous* and *gangrenous* sore is rarely followed by constitutional symptoms; the *phagedænic diphtheritic* occasionally gives rise to them; the *indurated almost always*. It is well known that Hunter was so imbued with this opinion, that he disbelieved in a sore being syphilitic, unless it presented an indurated base. M. Ricord lays so much stress upon it, that when a patient enters his wards, presenting an indurated chancre of six weeks' duration, and when no secondary symptoms have yet appeared, he often puts him on a "*traitement expectant*," and but few days or weeks pass before the occurrence of the well-known characteristic symptoms of general infection. M. Ricord never allows a patient to leave his hospital when the slightest induration even of the cicatrix exists; should he, in spite of admonition, quit, he is told that secondary symptoms will result, and the prediction is found to be too true.

The occurrence, then, of secondary symptoms depends principally upon the existence of induration; but this will be fully treated of under the head of Indurated Chancre, to which I must refer my reader.

Let us now inquire how far the *complications* can assist our prognosis in reference to the occurrence of secondary symptoms. We may erase from the list, gonorrhœa, paraphymosis, and phymosis, as they can have little direct influence in disposing to constitutional syphilis.

The circumstance of the existence of bubo demands a separate consideration. *A-priori* reasoning might lead a surgeon to believe, that when a suppurating bubo co-exists, there would be a greater probability of constitutional syphilis following, than when chancre alone appears. Experience on a large scale, however, contradicts such an opinion; a suppurating bubo, as we shall hereafter find, is often but an internal chancre, and by no means proves that the virus has entered the system; we do not however find that absorption takes place more rapidly from this chancre in the gland than from an open chancre. This circumstance, moreover, seems to prove that the venous system plays an important part in occasioning the general infection. I would, however, refer my readers to the prognosis of indurated chancre, in which this subject is further dwelt upon.

Further, we would speak of the *local treatment* of chancre, in as far as it may lead to the probability of the occurrence of secondary symptoms.

In the first place, let us again repeat that secondary symptoms will follow even when all treatment has been neglected ; they may (though in a far less proportion) succeed the most judicious local treatment. On the other hand, secondary symptoms may not occur, although the chancre be allowed to proceed without treatment.

Secondary symptoms do not necessarily follow, although the local treatment of the chancre has been injudicious.

In respect to general treatment, the same observations hold good. Secondary symptoms do not necessarily follow when general treatment has been neglected. The best and longest-continued plan of general treatment will not in all cases insure your patient against their occurrence.

These facts at once show the absurdity of some persons' reasoning, who attribute to the effect of treatment what in fact is only the usual course of the disease ; it is from want of acquaintance with the natural history of the complaint, that unjust blame or injudicious encomiums are heaped upon so many therapeutic agents.

Lastly, I would call my reader's attention to the all-important fact, that secondary symptoms will not follow a chancre, provided constitutional syphilis can be proved to have once occurred. A man may suffer any number of times from primary syphilis, but he is insusceptible of a second constitutional taint, provided he is once cured of it, although relapses may frequently occur.

TREATMENT.—In accordance with the plan I have pursued in other parts of this work, I shall divide the treatment into the different stages of *local* and *general* treatment.

LOCAL TREATMENT.—The more precise notions entertained by modern surgeons on the cause, progress, and termination of chancre, have rendered popular the employment of caustics in the profession, and, at the present time, escharotics are almost exclusively employed in the local treatment of ulcers on the genital organs, by all practitioners who acknowledge that chancre, like small-pox, or hydrophobia, depends upon a specific virus, capable of being destroyed in situ, soon after its coming in contact with the animal tissues. Although, however, medical men are agreed upon the efficacy of these remedies there is anything but unanimity shown in the manner of their application ; and it is in the absence of any practical directions on the point, that I propose calling the attention of the profession to the uses and abuses of these substances, confining my observations to such matters as private practice proves to be necessary. If a patient consults me within a few days after promiscuous intercourse, on account of any abrasion or excoriation, I employ *nitrate of silver*, except in the instances hereafter to be mentioned. I am well aware, that in nine cases out of ten in private practice, the appearances about which a surgeon is consulted are not of a specific character, and that the disease, if left to itself, would probably get well under simple treatment. Patients who have once suffered from syphilis easily get alarmed, and come to their surgeon on the slightest appearance, still, I must maintain, that in the early stages of syphilis, the specific disease is not to be distinguished by any characteristic appearance, and I think it far preferable to cauterize nine simple sores than allow one specific ulcer to gain ground, which it will undoubtedly do if not cauterized, and the virus effectually destroyed. It is, however, by no means true, that all non-specific sores will heal under simple means ; or even if this were granted, it must still be allowed that nitrate of silver often expedites cicatrization, or, at any rate, does not retard it unless injudiciously employed. I would urge, then, the employment of caustic in all these cases ; and the success of the practice will be the best guaranty of its efficacy.

Experiments on inoculation have incontestably proved, that if caustic be employed soon after the receipt of the virus, all further effects may be stayed ;

they have, moreover, shown, that up to the third day the disease is of a local nature, entirely confined to the parts with which the virus has come in contact ; and the patient may be guaranteed against the occurrence of secondary symptoms. I would remark here, however, how different are the laws of animal poisons. Glanders, when inoculated, and the pustule destroyed in twelve hours, produces its effects as usual ; the rattle-snake poison acts still more rapidly, each animal poison having laws of its own. We may be called in too late, but the surgeon must not be inactive, he must combat the disease with all his means.

If, however, it may be desirable to cauterize abrasions or excoriations, the injudicious and continued use of escharotics may be fraught with great disadvantage, and the caustic may act as an irritant, preventing the healing of a sore.

This is often witnessed in patients who think that they can treat their own cases, and following, as they believe, the surgeon's plan, employ nitrate of silver most bountifully ; great pain is produced ; a deep eschar comes away in the course of a few days, the irritability of the organ is greatly increased ; and being unable to uncover the glans, the patient now seeks the assistance of his surgeon, who, after carefully examining the parts, finds the original sore re-inoculated, and perhaps several other smaller ones in the neighborhood. These cases clearly show that the employment of caustic, in injudicious hands, may often do more harm than good ; that while the nitrate of silver destroys the virus of one sore, the irritation it produces prevents us seeing the mischief accruing to others ; and probably the non-observance of these rules has led to caustic being very much abused. Before we employ nitrate of silver, the part should be carefully cleansed by being soaked in warm water, as the virus may exist on the surface of the neighboring skin, and, if not washed off, will re-inoculate the sore when the little eschar falls, and undue blame will be thrown on the caustic. Although then no other ulcer exists at the time of using the escharotic, still another sore, or a little pustule, frequently, in a few hours after, will be met with, which, if precautions be not taken, will go on increasing, and the disease will spread rapidly. These circumstances explain several anomalies which have thrown discredit on caustic. The parts should now be carefully dried, and if it be an excoriation the surgeon is called on to treat, the skin should be put on the stretch, and the solid stick of nitrate of silver lightly passed across it, so as effectually to whiten the surface in its entire extent ; all cracks and crevices must be treated in the same way, and dry lint applied for the next eight or twelve hours after cauterization.

Should the surgeon be called upon to treat chancres at the orifice of the prepuce presenting the appearance of cracks, he must draw back the prepuce gently, and he will be enabled to cauterize the entire extent of the chancre ; but in repeating the operation, let him take care not to rupture the cicatrix, or this linear chancre will extend : the same observation applies to the treatment of chancres on the frænum ; to obviate the difficulty of healing such ulcers, I usually divide the frænum, and cauterize the whole of the cut surface. Without these precautions, it may be weeks before you will heal such sores. Reliance must not be placed alone on caustic, and previous ablution, but extension of the disease should be stayed by lotions of an astringent kind ; the one I prefer is a solution of pure tannin, in the proportion of two grains to the ounce of water, which not only checks the discharge, but seems to tan or harden the skin : the private patient, however, should be told, that this solution slightly stains his linen with a brown mark, or the lotion may tell tales to the family ; to obviate this, a weak solution of sulphate of zinc may be employed, or, if desirable, dry lint ; but dry lint has the objection, in some instances, of irritating the part, and prevents the little eschar falling, thus preventing us re-applying the caustic.

We now come to consider how soon the caustic should be reapplied. The rule I follow is to employ it as soon as the eschar is removed, and this will vary in many cases; generally speaking, it is sufficient to cauterize once in twenty-four hours, particularly if the sores be numerous or large. More frequent applications might be useful, did they not produce irritation, and should swelling of the prepuce arise, the mischief will be greater than by allowing the disease to run its course, as, in the latter case we should be unable to employ ablation; before removing the lint, let the part be well soaked, or the little eschar may be detached.

If, however, nitrate of silver is useful in abrasions and excoriations, reliance should not be placed upon this escharotic in severe cases, or where pustules or ulcers are formed; experience teaches us that this salt is not sufficiently potent, its action being confined too much to the surface, and repeated applications are necessary, which may be oftentimes inconvenient. Whenever, therefore, the surgeon is called on to treat a pustule which he suspects to be a chancre, let him open it, remove the pus with a point of lint, and fill the little depression with Vienna paste,* or cauterize it with the solid lime and potash caustic alluded to at page 208. In cases where a scab covers the ulcer, the former must be first removed; this is readily done, by a poultice or water-dressing, and then, after carefully washing the surface, a layer of one or other of the above-named potent caustics may be placed on the sore and allowed to extend a little beyond the margin of the ulcer.

The application of the escharotic is, of course, followed by considerable pain, which gradually goes off; the sore, however, should be exposed until the eschar is dry, or the paste would act on any part it comes in contact with. This eschar falls in due course, and leaves beneath it, generally speaking, a cicatrized spot, or a healthy sore which has lost its specific action, and heals in a few days under a mild astringent wash.

Cauterization, however, will not be found of the same efficacy in very large ulcerations, nor have we seen such favorable results when sores are situated on mucous surfaces, or where they are kept damp; in these instances the abortive treatment does not succeed. Furthermore, the application of escharotics is not generally applicable in chancres attended with inflammation. Experience proves here, as elsewhere, that although nitrate of silver may be useful in allaying irritability, and in curing sub-acute inflammations, its employment in acute inflammatory attacks is very doubtful, or, at most, useful in but a very few instances; and though surgeons may derive great benefit from its employment in chronic ophthalmia, in scrofulous constitutions, and in sub-acute inflammation of the urethra, few, if any, ever recommend it in acute affections of these organs, unless in the single exception of erysipelatous affections of the skin, in which it has been, like many other applications, much vaunted, and subsequently laid aside. When chancres are attended with acute inflammation, caustic will be worse than useless; experiments prove that phagedæna destroys the virus, and they likewise show us that caustic often increases instead of allaying inflammation; therefore when the latter is present, recourse must be had to opium, rather than to nitrate of silver, as I shall show when treating on that variety of chancre.

But it is not alone in acute inflammatory chancres that we must lay aside

* The Vienna paste is made by rubbing together five parts of caustic lime and six of caustic potash. The powder must be kept in a well-stoppered bottle; when required for use a little may be laid on the bottom of a saucer, and a few drops of spirit added, just sufficient to form a paste of a firm consistency; the escharotic may then be applied on the point of a steel instrument I keep for the purpose; and it is astonishing with what accuracy this paste may be employed, as it has no tendency to destroy the surrounding parts when made of the proper consistency, and no protection to the skin is required; but I always have by me a little vinegar, in case of any minute particles falling about, and the acid immediately stops their action.

the use of caustic; we should never apply the salt when previous applications have irritated the sores, or we might continue its use *ad infinitum*, without healing the ulcer.

On April 12th, 1846, a gentleman who had previously suffered from chancres, and experienced the benefit of cauterization, had connection with a suspected female, and observing an excoriation the next morning, himself applied nitrate of silver most plentifully; the eschar fell in twenty-hours, and, the patient states, a quantity of pus escaped; he thought it necessary to burn the sore a second time, and applied the caustic freely; in two days, feeling alarmed at the pain and redness, he called on me. A pustule, exactly similar to those delineated as following inoculation as seen in Plate IV., was visible on the penis; the white pellicle was surrounded with an inflamed areola, and there was some pain. I felt pretty well convinced that this was the result of irritation alone. I prescribed water-dressing, and the pustule healed in a few days. Now this is one of a large class of cases where diagnosis is difficult, and which are often seen in private practice, arising from irritating applications. A few days, however, generally clear up any doubts a surgeon may have; for if the condition of the sore be the result of irritation, the pustule heals; if it depends on chancre, the disease progresses, and the surgeon has the certainty of treating a venereal sore, instead of one of those simple irritated excoriations, which I have more than once seen submitted to a course of mercury, under the supposition that the patient labored under virulent disease.

Another counter-indication to caustic is induration of a sore; the surgeon should never cauterize a genuine Hunterian chancre, or one attended with induration; if he does, he will cause great pain, the sore will become irritable, and gangrene will often follow, as I have observed in several instances. Cauterization of such sores shows great ignorance of the objects and aim of the employment of nitrate of silver, as well as of the treatment of induration; for as these sores secrete little, we have scarcely any virus to destroy. But even destroying the induration would be of little avail, as experience shows that where hardness exists, the constitution is already contaminated, and if removed, we should have no criteria to go by, of the state of the system, until secondary symptoms appear. The ulceration on indurated sores depends on the hardening impeding the cicatrix forming, and to remove this, absorption must be brought about by other means, as I shall hereafter show, in speaking of Indurated Chancres. From these considerations, then, I never employ caustic where there is induration, and consequently I do not find patients complaining, as they are said to have done formerly, that destroying chancres with caustic produces secondary symptoms, from driving the disease into the system, a charge it is well to avoid, however impossible such a thing is believed to be by practitioners in the present day.

During the course of treatment, a patient will occasionally complain of vague pains in the groin, in some cases shooting down the cord; the finger can, however, detect no tenderness or enlargement in this situation, and we may generally set down these cases to irritation of the extremities of the nerves, which will disappear as soon as the cauterization is laid aside. In my own practice, the occurrence of bubo is very unusual, and when observed, follows usually in persons who have previously suffered from swellings in the groin; in these instances every precaution must be taken to avoid their reappearance, by enjoining rest; but I have great doubt if low diet is necessary, although a recumbent position is highly desirable, and on the first appearance of swelling or heat of the groin, leeches and cold applications must be resorted to.

Bubo, let it be remembered, depends not so much on the treatment as on the situation of the sore, as I have stated at page 258.

The treatment of the few remaining cases of simple uncomplicated chancres

which it is not thought advisable to treat by the abortive plan for reasons stated above, is very simple; the indications to be fulfilled consist in preventing the occurrence of inflammation, and in cases where this is threatened there is no form of lotion so good as the saturated solution of opium. The next indication consists in checking the secretion of the sore, and tanning or hardening the surrounding surface so as to prevent inoculation. This is effected by employing astringent washes. I usually prescribe—

R.	Acid. tannici,		
	Zinci sulph.	aa gr. ij.	
	Aqua.	3ij.	
M.	ft. lot.		

If this gives much pain, I dilute it further, so as to produce only a slight smarting, which does not last more than a few minutes. Let the patient bathe the sore four or five times during the day with this lotion; a small piece of lint soaked in it may be laid upon the sore, and the whole may be covered with a piece of oiled silk; thus the lint is kept constantly moist; it will be found well to wet again the parts before removing the lint, as it might become adherent, and cause the sore to bleed if detached with any violence.

The patient must keep quiet, but it is by no means necessary to exact the horizontal posture, or confine him to his bed; his diet should be light but nutritious.

If parts of the sore granulate too luxuriantly, they may be lightly touched with nitrate of silver, the caustic may moreover be used with advantage in hastening cicatrization; but this I now find best affected by brushing the sore over with a solution of gutta percha and India-rubber, as it acts the part of an artificial skin, screening the delicate surface from the contact of the air.

Of all things, let the surgeon lay aside the old system of treating chancre with ointment; the lard will soon become rancid, and thus eczema and irritation be produced around the sore, favoring further the secretion of pus, and the chances of inoculation, as well as the extension of the sore, will be considerably increased. When perfect cicatrization has been obtained, and no local disease remains, the patient may be allowed to resume his usual occupations.

GENERAL TREATMENT.—In speaking above of the local treatment, nothing has been hitherto said of general or constitutional means, particularly as those who contract syphilis are generally in excellent health, and I have usually found in the local treatment of uncomplicated chancres, these simples means effect a speedy cure; and I must protest loudly against any general or constitutional treatment being employed, provided the health be good; in such cases the patient need not observe any restriction as to diet, but it is better to abstain from horse-exercise, or violent excitement of any kind.

But must no mercury be given to expedite the cure and prevent secondary symptoms? Before speaking of the necessity of taking mercury, I wish to remind the reader that a person who has undergone, or is undergoing, a course of mercury, is as liable to a fresh local contagion (if he expose himself) as if he had not taken a grain of the mineral: and hence we infer that the mineral by no means acts as a local antidote. The result of numerous cases treated during the last ten years, and which still remain under my observation, induces me to believe that mercury is by no means necessary either in expediting the cure, or in preventing secondary symptoms. Without the mineral the local cure is rapid, and secondary symptoms do not occur, except in such feeble proportions that they should not enter into our calculations. It is true, the exceptional cases may injure the reputation of the surgeon, and he may be told that, had the patient taken mercury, constitutional infection would not have followed; but in nine out of ten other cases, the patient will justly extol the merits of his surgeon, who has spared him a course of mercury, which immunity from con-

stitutional disease proves to have been unnecessary ; and I can not lend myself to approve from expediency, what I believe to be scientifically wrong and unnecessary, or to sanction the treatment of those who may assert that every chancre or sore on the penis should be treated with mercury, on the plea that if secondary symptoms follow, the surgeon at least can not be blamed, and the treatment without mercury called in question. I hope there are but few practitioners who will lend themselves to this system of special pleading ; if there be any such, they will find, to their cost, that they give mercury where none is required, and give an insufficient quantity in cases calling for its administration. There is another large class of practitioners, however, who administer mercury whenever a sore appears on the genital organs, on the same principle that I have recommended the application of escharotics—namely, that perhaps the sore is not specific, but in the absence of any absolute diagnostic sign, they wish to be on the safe side, and guard the patient from secondary symptoms. Did mercury act like nitrate of silver, and confine its effects to the local influence on sores, this idea would be tenable ; but to effect the purpose, the sore must be acted on through the constitution ; and will any surgeon assert this can be done nine times in ten with impunity, particularly when experiments prove that in these nine cases recourse to mercury is unnecessary, and when employed, gives no ample guaranty against secondary symptoms, as the recorded cases of mercurialists prove.

We however meet in private practice with another class of extremely well-educated surgeons, who believe that mercury should be given in most primary sores, and in the very earliest stages ; and they prescribe it from a deep conviction that mercury thus given prevents absorption of the virus into the system ; or if it does not prevent this, causes at least the absorption of the antidote at the same time, and in consequence the disease will not, say they, be followed by secondary symptoms. This school has, however, assumed as proved several points which experience by no means sanctions or corroborates. For instance, I am not aware of any series of experiments to show that mercury will prevent absorption ; on the contrary, mercury is by many believed to hasten this process, and as such it is largely given. The belief in it acting as an antidote in the circulation seems founded on no facts whatever that I can discover. If it be pretended (when mercury is given in the earliest stages, and no secondary symptoms follow), that the immunity depends upon the treatment, no conclusion can, I think, be more impotent ; for these gentlemen seem to forget that in nine cases out of ten the same thing will happen where mercury has been altogether abstained from, and they have thus attributed to their remedy what is the natural course of the disease, not having apparently seen syphilis running through its entire course unchecked by mercury ; for how few (except, perhaps, the army surgeons), brought up and educated in the metropolis, have watched one hundred cases which were not treated with mercury. When the mercurialist sees cases (treated with mercury) not followed by secondary symptoms, he concludes that mercury has prevented their occurrence, whereas, the records of hospitals, and the experience of private practitioners, who treat cases without mercury, prove that the same effects follow the non-mercurial treatment, although its advocates have the high satisfaction of believing they have saved nine out of ten of their patients by a course of mercury. Let it, however, be clearly understood, that these observations apply exclusively to the unindurated chancre. The hardened sore requires a peculiar treatment, both local and general, as I shall have occasion to show ; and much of the diversity of treatment, as well as their opinions on the disease, depends upon authors not regarding the marked distinction attending the course of the indurated, as compared with the simple ulcer. Almost all surgeons are unanimous upon the inutility of iodide of potassium in simple ulcers, and few now prescribe sarsa-

parilla; in fact, the treatment of uncomplicated cases of chancre is becoming purely local. Experiments have indicated this, and experience has sanctioned it, to the almost entire exclusion of all other treatment.

At page 250 we stated that artificial chancre itself was liable to variations in its ulcerative stage; it is to a consideration of the causes, consequences, and treatment of these varieties, that we now particularly invite the attention of our readers.

We shall not again repeat the reasons given at page 252 for our belief that only one syphilitic poison exists, the effects of which may become modified according to the constitution of the patient, or the plan of treatment to which the sore may have been submitted, but at once commence the description of the most common varieties.

If the reader will consult the work of the late Dr. Wallace he will find a minute description of an immense variety of sores, and in other authors the same abundant nomenclature will be found, but all these may, as far as practical purposes are concerned, be grouped under the heads of *GANGRENOUS*, *PHAGEDENIC*, *SERPIGINOUS*, and *INDURATED CHANCRES*. Let the reader, moreover, recollect that in practice these divisions are even not always recognisable; very frequently a sore partakes more or less of the characters of two of these varieties; nature recognises none of these distinctions, they are arbitrary divisions made by pathologists, principally for the purpose of describing *seriatim* the different changes ulceration may undergo; but although occasionally we find typical cases of these affections, more frequently they blend one with another, as will be proved in the following pages, and the surgeon may find some difficulty in distinguishing the different sores; the diagnosis, however, is of great importance, as the proper treatment of our patient depends upon a correct view of the case, as what may be good for one form of sore is often detrimental to another.

SECTION III.

INFLAMMATORY, IRRITABLE, AND GANGRENOUS CHANCRE.

SYMPTOMS.—A chancre may assume an inflammatory character from the moment the virus comes in contact with the abraded surface. The usual concomitants, pain, heat, redness, and swelling, which we have found very slight in simple chancre, may set in and become aggravated in a very short space of time, when inflammation thus early occurs; we witness it in young plethoric men fresh from the country, who live freely, undergo great fatigue, and take large quantities of stimulants, the affection taking on a frank inflammatory type, not by virtue of any specific action of the virus, but from the state of the system; this is the form of inflammation that requires free depletion, and which is benefited by it more than any other; in fact, unless local and general bleeding is employed, this form readily goes on to produce gangrene and a great loss of parts. In private practice in London, this form of inflammatory chancre is not often met with, but in hospitals it is not of unfrequent occurrence among bargeemen and railway laborers.*

* When the British army landed in Portugal, the soldiers were all of native breed, and habits—sanguineous, plethoric, highly fed soldiers, and addicted as they had ever been to the use of alcoholic stimuli. The climate at the autumnal season of the year was hot, and the campaign, before reaching the capital, had been active. Under these circumstances, intercourse with the common women of the country produced the usual consequences of syphilitic disease, for which at that time we knew of but one remedy—*intus et in eute, ab ore usque ad molo*, and afterward, so long as the patient remained above ground—no matter what mutilation and exfoliation he might have suffered—mercury was the sole panacea. With such subjects, more especially at the beginning of the disease, before being low-

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CAUSES.—Inflammatory chancre more frequently arises from some irritating application to a sore, or from some peculiarity in the situation of the ulcer. Thus we witness it when caustic is injudiciously applied in either too strong solution or too often repeated. We meet with this form in sores seated close to the frænum or meatus in the male, at the fourchette or around the anus in the female.

In men, one of the most common causes of gangrenous chancres is the existence of a narrow prepuce. The secretion of the chancre thus confined in the species of sac formed by the prepuce, causes inflammation, additional chancres ensue, so that the lining of the prepuce may become an ulcerating, virulent surface; the loose cellular tissue of the prepuce becomes œdematosus and inflamed; a phlegmonous or an erysipelatous state succeeds, which often terminates in gangrene; a dark spot appears on the prepuce, usually on the upper part; an eschar forms, falls off, and the glans is observed appearing through the ulcerating opening; a fetid discharge oozes out, composed of the detritus of the gangrenous tissues. In some cases destruction of the prepuce only occurs; in others the glans participates, and a great portion may be destroyed; the vessels of the surrounding parts are exposed, then ulcerate, and hemorrhage follows, which it is often difficult to check, producing great mischief.

We meet with the same effects in cases of paraphymosis, where the circulation is interfered with in consequence of the constriction of the part as well as the swelling which it produces; and in this and the last case, no treatment will be of any avail, unless an operation be performed.

One peculiarity in this form of gangrenous chancre is, that the specific action of the virus is usually destroyed, particularly when gangrene occurs early; and although it may give rise to severe destruction of the organs affected, yet secondary symptoms rarely occur; and however destructive the local mischief may have been, constitutional infection need not be dreaded.

The power of the system to repair large chasms and mould parts again to something like their original form, is nowhere more strongly witnessed than after destruction by gangrene of large portions of the penis. As soon as the sloughs are thrown off, healthy granulations sprout up most rapidly, and the sore losing its specific action, cicatrizes most perfectly, leaving the most essential portions of the virile organs intact. When the surgeon is called in very late, portions of the glans may be lost, but the corpora cavernosa and corpus spongiosa are seldom implicated, and the loss of cellular tissue is of no moment. It is singular that gangrene spares blood-vessels, nerves, and fibrous tissues, which often are seen intact amid the havoc among the undermined and destroyed cellular tissue.

The TREATMENT of inflammatory chancre consists in removing, if possible, the cause which has given rise to the complication. Rest in the horizontal position, if not confinement to bed, is indispensable, and without it all our other remedies are often ineffectual. The general treatment should commence with a brisk purge of jalap, followed by salines if necessary. General bleeding may be called for; but the surgeon should pause before employing depletion, as rest

ered and depleted, it might have been foreseen that phagedænia would assume the reins while mercury gave the spur. Our hospitals everywhere exhibited instances of the most melancholy mutilations, and even among the officers these were occasionally seen. The Portuguese meanwhile regarded our practice with horror and astonishment. Within the disease was ordinarily of a chronic and mild character. It was a misfortune of which they thought no more shame than they would of scrofula or of cancer, and they sought no concealment. All this led to my first publication in the *Médiico-Chirurgical Transactions*. Mercury in excess and long continued, had even led to exfoliation of the facial bones; and for these exfoliations we gave no mercury. Need we then wonder at the number of victims as we then thought of the disease, but in fact of the remedy. The Portuguese, I may almost say, had no phagedænia. I can not call to mind a single instance similar to ours, with the exception of a camp-follower on the establishment of a staff-officer; but he was as highly fed, a drinker and sanguineous, as any of his English fellow-servants.—*Dr. Fergusson's Notes and Recollections* (may I not add confessions?) of a Professional Life, page 123.

and abstinence from the exciting causes of disease rapidly bring down the inflammation, particularly in persons accustomed to live in towns.* Bathing the parts, and strict attention to cleanliness, are of the first importance in the local treatment; leeches may then be employed in sufficient numbers, and at a proper distance from the sore, and, as soon as this is effected, lotions of the saturated aqueous solution of opium (formed by boiling half an ounce of opium in twelve ounces of water until reduced to eight ounces) and applied warm, the lint being covered with oil-silk, and changed as often as it may be necessary for comfort or cleanliness. This must immediately be followed by laudanum, taken internally in large and frequent doses, provided the stomach and head will bear it. It is surprising what large quantities men, who have never before taken small doses of laudanum unattended with headache, will swallow without the slightest inconvenience. I lately attended such a case in a gentleman, who took an ounce and a half in three days, his tongue remaining clean, and appetite not impaired. I have found Battley's preparation succeed best, as it produces less nausea than the tinc. opii or morphia. The surgeon, in giving opium in large doses, must recollect that it has a tendency to temporarily paralyze the bladder; at least the patient is unable to make water, although feeling a desire to do so. In such cases a warm bath or hip-bath is the best remedy. The patient should be told of the probability of this, or he will get much alarmed. This retention of urine, however, is of minor importance, but is a very general result of freely employing opium.

I can not close this chapter on the use of opium without making a few observations on the addition of nitric acid to opium in the treatment of these ulcerations. In a paper read before the Medico-Chirurgical Society by Mr. Welbank, reported in the eleventh volume, the external employment of nitric acid and opium is recommended to sloughing phagedæna, in the form we shall more particularly allude to a few pages further on, and has been persevered in ever since. There are many surgeons in London who still employ these lotions in private practice. I lately met, in consultation, a gentleman who, finding the case not progressing very satisfactorily, advised the addition of nitric acid; against my wish the acid was used; the first application gave great pain, the inflammatory symptoms became aggravated, and the patient was obliged to leave it off. I have found nitric acid in no case useful as an addition, and I have yet to learn on what correct principle this therapeutic agent can be recommended; I can not imagine a more unscientific compound.

In cases where gangrene becomes imminent, or has already taken place in consequence of phymosis, instant steps must be taken to relieve the complication. This is done by passing a director between the glans and prepuce, and dividing the prepuce with a bistoury;† considerable haemorrhage follows, which freely unloads the vessels. However, this does not always stop the gangrene, which may destroy a great portion of the prepuce. Inoculation of the entire cut surface may follow, although this seldom occurs, as the gangrene will usually destroy the specific nature of the virus. When a case presents itself, in which

* The late Mr. Key thought highly of the cold infusion of sarsaparilla in lime-water. "Its power of allaying irritability of action, local and general, is contestable; it lessens the frequency of the heart's action, softens the quick beat of the pulse, and diminishes the irritability of brain evinced in the eyes, and of the intestinal canal, as indicated by the tongue of some patients. When the languor of debility is present, this form of sarsa is of little use; it is only when there is inordinate action, short of inflammation, that its benefits are distinctly seen: and not only in this, but in all forms of venereal sore accompanied by such conditions of irritability."—*Guy's Hospital Reports*, vol. iv., p. 531.

† The young surgeon must take care that the director is placed between the glans and prepuce. I was once present at an operation when I saw a surgeon slit up, as he thought, only the prepuce. Let the reader imagine his dismay at finding that he had introduced the director into the urethra, and his bistoury had divided the canal to the extent of an inch, as well as the prepuce! I should not have supposed this mistake liable to occur, had I not seen it made by an hospital surgeon; and the mere recital of it will, I hope, make the young practitioner avoid such a deplorable result, particularly when the prepuce is very narrow and thickened by inflammation.

the prepuce is already destroyed and the glans is exposed, it is better to apply the opium solution, and allow the disease to take its course ; the gangrene usually performs the part of the knife, and complete circumcision results. An incision can not be of service, as no part is strictured, and the tissues divided present a puffy, lardaceous character ; it is therefore preferable to wait until all inflammatory symptoms have passed away, and then remove by the knife any portions which inconvenience the patient.

When paraphymosis occurs as a complication in the inflammatory chancre, reduction may be tried, but in the severer forms it is better not to attempt it, unless it is quite evident that our efforts will succeed : the manipulation will only tend to aggravate the inflammation, and we may convert paraphymosis into phymosis.

In such cases instant relief must be given ; the fear of your incision becoming inoculated must no longer be considered, and a free division of the stricture or strictures must be made. This is done by cutting through the thickened and swollen edge of the prepuce behind the glans penis, exactly in the median line. The blade of a narrow bistoury should then be introduced under the contracted part, so that this may be divided to the length of an inch, and then any little bridles which appear further to cause the stricture must be successively divided, and the case be treated by opium-and-water dressing, as above described. No sooner, however, is the constriction relieved, than the inflammatory symptoms abate, although in the more advanced stages gangrene will completely circumcise the patient. In many of these cases we have to divide oedematous and infiltrated structures ; and we may experience much haemorrhage, in consequence of the vessels not retracting. In some cases it may be allowable to let the blood flow ; in others, however, the bleeding should be checked ; and to do this most effectually, a needle may be passed under the vessel, and a twisted suture employed ; but I would abstain, in all cases where that is possible, from any sort of irritating dressing, as liable to keep up irritation in the wound. In instances where haemorrhage comes on in consequence of the gangrene having opened a vessel of considerable size, it may be necessary to apply dry lint or burnt powdered alum to check the haemorrhage, but as soon as possible these foreign bodies should be removed ; and lastly, I would recommend the surgeon to abstain from using balsamic or irritating applications, recommended so strongly by the old surgeons, who did not make those distinctions which the advanced state of pathology enables us to do.

When the sloughs are very offensive, it may be advisable to use lotions of chloride of soda, in the proportions of one dram to the pint. Fresh made and powdered charcoal may be sprinkled on the sloughs ; this will absorb moisture, and destroy the smell, which often is most offensive. As soon as the slough can be removed, it should be done by dividing it as close to the sound skin as possible, but no violence should be used, lest an artery be opened : to avoid this, the perfectly dead tissues should be alone cut through. Relieving the sore of any unnecessary sphacelated portions will be advantageous, provided they are not adherent in the whole extent, a circumstance rarely occurring in this form of the complaint. I have had no opportunity of trying the new deodorizing agents, and I have seen no good result from camphorated spirit and the thousand-and-one remedies vaunted by the older writers.

SECTION IV.

PHAGEDÆNIC CHANCRE.

In private practice in London, modified forms of this kind of chancre are by no means uncommon. A patient leading an irregular life contracts chancre, which by rest and attention is going on well; under the influence of some pressing engagement, or merely from ennui, he commits some indiscretions or excesses; the sore loses its healthy appearance, granulations disappear, the surface gets dark-colored, the discharge serous or ichorous; a dark areola forms around the ulcer, which extends gradually by a liquefaction, as it were, of the surrounding tissues. Rest and opium lotion will soon bring this patient's sore into a healthy condition, provided he lay up, is of a healthy constitution, has not been taking mercury, and lives in a good airy neighborhood; but if he is not in these conditions, or if the surgeon, as too often happens, gets frightened, and thinks mercury necessary for the cure, or the patient is worn down by a course of dissipation, and inhabits close, confined chambers, the sore will increase, and may assume a very severe form. The student will daily have evidence of the phagedænic sore in the cabman and prostitute who apply to the hospital; no form must be more familiar to his eye. In fact, so common are modified forms of phagedæna, that, in commencing my studies, I believed it formed one of the characteristics of syphilis. This arose in part from the class of persons treated at an hospital, and from mercury being given to the majority of persons laboring under syphilis. I need scarcely say that it is dangerous to form our opinions on such instances, as in other ranks of life syphilis does not generally assume these characters, although too often phagedæna may become a complication. The subject is one so important, and the treatment of the cases which I am about to recommend so novel and so little understood by English surgeons, that I must strongly urge the subject on the attention of the profession as one deserving their consideration, not only from the frequency of the disease, but from the invariable success of the treatment, provided attention be paid to the diagnosis of the cases.

CAUSES.—Phagedæna depends most frequently upon the previous or present general state of health. Local causes may aggravate it, such as irritating applications, &c., or constriction of the parts, or the situation of the sore; but though these causes may induce inflammation, they do not alone produce the complication.*

Among the most common causes is a pale, anemic state of system, too often met with among our town populations—the effect of want of pure air and regular exercise, residence in ill-ventilated or confined houses, damp situations, a lymphatic temperament, scrofula, unwholesome food, dram-drinking, and a course of dissipation which the habits of London life lay open to the youth of England, and which can not be surpassed in any capital in Europe. Among

* Mr. Aston Key makes the following observations on phagedæna: "The more immediate effect of phagedænic tendency in sores is an extension of the ulcerated surface; and the cause lies in a morbid degree of susceptibility or irritability of the system. Ulceration is the destruction of tissue by inflammation; it is clearly not a process of absorption, but of simple disintegration of tissue; it occurs only when the vital powers are reduced, and are unable to control the action that tends to disorganize the structure. It differs from gangrene in this, that while, in gangrene, vitality ceases before the disintegration of the tissue has time to take place, in ulceration the parts are still subject to the vital powers while they are undergoing a change from a solid organized texture to a fluid inorganic mass. What the state of circulation is in parts undergoing ulceration is difficult to ascertain; it can not wholly cease at once, as gangrene would be the result. It is probable that the influence of the nervous and circulating systems is gradually withdrawn from the surface of parts about to ulcerate. Whatever may be the physical explanation, the physiological state is one of weakness, accompanied with an excess of action in both the vascular and nervous system of the part."—*Guy's Hospital Reports*, vol. iv., p. 432.

all its dissipations, neither Paris nor Vienna can compare with London in its late hours: in the continental capitals, all retire at eleven o'clock; in London at that hour dissipation is only commencing, to be continued until the Frenchman or German's usual time for rising. Broken rest is among one of the many causes why the young Englishman's constitution is so soon ruined; may we not add, likewise, the large quantity of spirits the young London rake thinks it fashionable to take as compared with his continental brethren?* In all these cases the nervous system suffers more than the vascular.

CHARACTERS OF THE SORE.—The phagedænic sore may vary in size from that of a pea to a crown-piece; usually it is superficial, rarely extending deeper than the sub-cutaneous cellular tissue. The shape is more or less round, but still irregular; the edges, of a brownish hue, are usually undermined, and the disease has a tendency to burrow, particularly if position assists it. The base of the sore is somewhat swollen—not, however, indurated; the surface is uneven, covered with little eminences and depressions, presenting here and there attempts at cicatrization. A more or less adherent yellow matter covers the ulcer, which it may be difficult to remove, or which comes away in shreds. Granulations are altogether absent, or, if any exist, are observed to be pale, few in number, transparent, and swollen, looking like vesicles; more frequently, however, the surface is of a grayish color, interspersed here and there with little bloody points or reddish lines. The pus is thin and offensive, holding in suspension the detritus of the tissues and flocculi of pultaceous matter: it is inoculable during the progressive period. The ulcer extends rarely, however, beyond the sub-cutaneous cellular tissue. It may last a long time, and cicatrization may be much retarded.

It is not uncommon to see on the surface of the phagedænic ulcers a species of ecchymosis, and sphacelated spots. There is pain of a peculiar stinging, smarting kind, which keeps the patient very restless.

The general symptoms seldom run high; the fever is rather of an adynamic kind. There is often prostration of the vital powers: in advanced stages of the disease, the appetite is lost. There is pain in the head, palpitation, neuralgic pains, and a peculiar unhealthy hue of the skin. Various eruptions may appear, either around the sore or on the body; these may consist of ethyma, eczema impetiginodes, or rupia, all which have and may be mistaken for secondary symptoms. The debility and general prostration of the animal powers gradually decline, and the patient, unless relieved, gradually sinks, worn down by diarrhoea and colliquative sweats. M. Ricord states he has found ulcerations in the intestines in cases in which he has had an opportunity of performing post-mortems.

DIAGNOSIS.—I have already noticed that inflammatory, irritable chancres, phagedæna, and gangrene, are merely optional divisions, which, although very different from one another in some cases, yet approach each other through gradual shades until it is often impossible to say whether a sore partakes more of the character of the one or the other, particularly when the causes common to both forms occur in the same individual. Still the reader will, from the above descriptions, be able to distinguish in the majority of the cases one from the other: thus inflammation, or some local irritating agent, is the cause of inflammatory or gangrenous chancre, whereas a peculiar state of constitution exists in the patient suffering from phagedæna. In the former, the health of the patient is not impaired—on the contrary, the powers are rather above than below par; the reverse happens in phagedæna. In gangrene there is death of the implicated parts, and sloughs come away; in phagedæna a sort of liquefaction of the tissues arises, melting down the surrounding structures which

* In M. Ricord's wards, September 20, 1847, I only witnessed five cases of phagedæna, showing the small proportion out of 112 patients.

are previously destroyed. The gangrene does not confine itself to the superficial, as does phagedæma, and the destruction of the implicated tissues is much more rapid. These are among some of the diagnostic symptoms of the two affections.

Mr. Aston Key says: "The distinction between an irritable and an inflamed ulcer is sufficiently broad, and yet the terms are often confounded, and even misapplied. An inflamed ulcer, because it is painful, is regarded often as an irritable sore—an error that leads to most painful mistakes in practice, inasmuch as the treatment most appropriate to the reduction of inflammation is neglected, and the sore is brought under the action of remedies that tend rather to increase than allay inflammation. The vivid colors of the surface, the fibrous deposit covering the granulations, the ichorous discharge, and the thickened edge, one or all evince the existing degree of inflammation; while the absence of those signs, and in their place a degree of sensitiveness disproportionate to the extent of inflammation, or a disposition to spread by ulceration, is evidence of an irritable state of sore. But though the extreme of each class of sore is distinct enough, the line that divides them is not so clear or defined. Many sores exhibit more or less of both characters. An ulcer may be highly sensitive, and at the same time inflamed, and yet not be disposed to spread in consequence of the patient's *vis vitæ* not being sufficiently reduced; while a similar ulcer in another patient, attended with the same degree of inflammation, shall become phagedænic from want of constitutional vigor. Inflammation, therefore, as a cause of phagedæna, is not to be lost sight of, nor an exclusive regard be paid to the irritable state of the sore or the patient. A mixed view of the case leads to a mixed mode of treatment. Inflammation in one degree combined with much irritability, leads to destructive ulceration; a higher degree of inflammation, with a less degree of irritability, leads to the yellow slough; while the highest degree of inflammatory action, with a further diminished irritability, produces the dark slough or gangrene."—*Guy's Hospital Reports*, vol. iv., p. 435.

Again at page 410, Mr. Key, in speaking of the distinction between severe cases of inflammation leading to spacelus and phagedæna, says: "The difference between this and the phagedænic action is, that in the latter the texture of the part affected retains its vitality, but not its integrity; while in the former (spacelus) the reverse takes place; the circulation quickly ceasing, while the texture appears to undergo but little change, or even none, if the gangrenous action be rapid."

PROGNOSIS.—The favorable prognosis of phagedæna depends rather on the treatment a surgeon is about to pursue, than on the cause which has given rise to this form of complaint. The patient's pain may at once be relieved, provided he be seen early, and all irritating local or constitutional remedies be left off, and the patient promise to follow the directions of his surgeon; but if, on the contrary, late hours, and a course of dissipation, with neglect of treatment, be pursued, nothing that the surgeon may be able to prescribe will be of the slightest benefit. Prognosis is the more unfavorable, in proportion as the health of the patient has been worn down by a course of mercury; and this is one of the most common complications in practice, for the surgeon, too often finding the sore progress from bad to worse, has recourse to mercury, which leaves the patient in a worse condition than before; if however, even in this case, the mineral be left off, and sarsaparilla given, the constitution rallies somewhat, not I believe in virtue of the remedy, so much as from abstinence from mercury. If the reader has inclination to read through the pages of modern treatises, this admission that mercury is not always beneficial, is allowed even by the most devoted mercurialist; the consulting surgeon is too often not called in until mercury has been used or left off, and his services are required, because

the case is getting rapidly worse. Even in these instances proper treatment will cure the patient, although convalescence may be somewhat retarded. The deformity left in the local sore will be but slight, but we can not guaranty the patient against some of the dubious secondary symptoms which not unfrequently follow, and which it is often difficult to characterize.*

TREATMENT consists, in the first place, in removing the patient from all those remediable causes which by possibility may have produced this variety of chancre. If the means of the patient allow of it, I at once send the patient to a more airy situation, or get him to leave home for a short time; I prescribe warm baths once or twice a week, attending to his diet, which should be nourishing without being stimulating; if he has been in the habit of indulging in wine, his supply should only be gradually left off, or the system suffers. In the severe forms the patient is obliged to keep his bed, but even in the slighter cases, remaining on a sofa or bed is of infinite service. All greasy applications must at once be left off, and purgatives may be given so as to clear the *primæ viæ*; but in other instances diarrhoea must be checked. If the appetite is impaired, tonics should be used; in fact, our first care should be the general health of the patient, without attention to which all our other remedies will not avail. If general or local mercurial treatment has been employed, let it at once be left off, however unfavorably the case may turn out, let the young surgeon never† be induced to give mercury under any pretence whatever in acute cases of phagedæna. Upon this question nearly all authors are unanimous—theory and practice go here hand in hand. I have witnessed unfortunately its sad effects when given by a few persons who still believe in its efficacy, and the results have invariably been unfavorable. The irritability is increased, the patient, already reduced, finds his powers still sinking lower and phagedæna progressing. He gets into an apathetic state, has no sleep, his pulse flags, pain in the head comes on, irritability increases, and the surgeon then says, "*I think we have given mercury enough; the patient's constitution requires support.*" Mercury is left off, tonics are given, and the patient *may* slowly recover. I have seen many sink under this fearful agent, thus lavishly and injudiciously given. The mischief and danger are not confined to the primary symptoms; if secondary symptoms follow, they will assume the most violent form, putting on the phagedænic characters. They will often commence as ectyma, eczema impetiginodes, or ru-pia, ending in ulcerations and affections of the bones. Want of space obliges me to omit many cases that I had extracted from my note-book to illustrate these positions; but I can not allow the opportunity of alluding to one that is found recorded in Mr. Abernethy's work; the case is detailed under that anomalous term "diseases resembling syphilis," which deserves notice in this place; it "is that of a sloughy sore, treated locally with irritating substances and internally with blue-pill, which was discontinued on account of derangement of system. For two months the sore continued to extend; a sloughing sore broke out at the corner of the mouth, became as large as a shilling; next a small spot broke out on the ear. A consultation was called on the case, and the surgeons decided upon treating the case by mercurial inunction, and the patient rubbed *in two drams, by weight, every night and morning, for six weeks.* The sore on the ear healed, but not the others. The further result of the case is not given;

* "I had occasion to watch nine cases of severe phagedænic chancres, the duration of which varied between ten months and three years. Notwithstanding the obstinacy of these ulcers in an inoculable state during this long period, in no one of them did secondary symptoms occur. I however forgot to say, that in one instance syphilitic roseola broke out in one of these individuals; but two months before the eruption, the ulcer on the penis, which had resisted all species of treatment during ten months, had suddenly become indurated, under the influence of some cause which we were unable to discover."—*Dr. McCarthy's Thesis*, page 18.

† The only exception is to be met with in a form of indurated chancre attended with central slough
See page 281.

but Abernethy adds he has met with many similar instances."—*Abernethy's Surgical Observations*, vol. i., p. 129.

I could furnish notes of cases occurring at the present day among Abernethy's former pupils to prove that similar treatment is attended with similar results.

I find in most cases the greatest local benefit from applying a saturated solution of opium to the sore, which should be employed with the same object and manner we have spoken of in treating of inflammatory chancre; it is the treatment most generally applicable in all cases. Until I have tried this plan, I never have recourse to the more powerful escharotics, which, however useful they may be to us when called on to treat phagedæna in its most severe forms, are often inapplicable, in consequence of the delicacy of the structures implicated, and a fear of destroying important parts; the method I shall however presently allude to in speaking of sloughing phagedæna.

The greatest reliance must be placed (and the surgeon will rarely be disappointed) on the various preparations of iron, given internally in moderate and increasing doses; this is the treatment which is new to English practitioners; at least iron was scarcely ever given in these forms until M. Ricord, in the early part of 1847, made public his investigations; I have since that period used it largely, and can most fully corroborate his opinions, and recommend it as particularly useful in this country, where phagedæna attacks sores more frequently than in France.

On the occurrence of the slightest symptom of phagedæna in a previously simple sore I prescribe iron in the following manner:—

B.	Fer. potass. tart.....	3j.
	Aqua.....	3vi.
M.	ft. mist. cujus cap. coch. ij. min. ter die.	

This solution may be likewise applied to the sore with the greatest local benefit; it will, however, produce iron-moulds on the linen; and to remove these (of which the patient may complain), I usually recommend the stain to be rubbed over with a little salt of lemons, then moisten it with a little hot water, or hold it over a basin of hot water, until the stains disappear.

The citrate of iron may however be doubtless given with advantage, and I dare say all the other forms of iron, but having found the tartrate answer, I have been content to use that remedy to the exclusion of all others.

The effect of the iron on the sore is not less remarkable than that on the system; in twelve or twenty-four hours, a sore which has been slowly but gradually increasing or remaining *in statu quo*, shows a visible improvement; the yellow tenacious secretion covering the surface of the sore detaches itself with facility, the secretions, which before contained but the detritus of the liquefied tissues, become more healthy, granulations are seen less pale and transparent, and show themselves in larger numbers, presenting a rose-colored or red appearance. The edges of the ulcer lose the dusky hue, become rounded off, and the sore takes the character of a healthy simple ulcer, and cicatrization takes place in the usual way. A patient loses that unhealthy look which anemic patients have; palpitation ceases, as well as pain in the head, the eye recovers its brilliancy, the appetite returns, and the pulse rallies; in these cases iron seldom affects the patient unfavorably; constipation, however, must be avoided, and to this purpose, some mild purgative must be given, but no restrictions as to diet are required; if the remedy disagrees, it may be left off for a few days after it has been taken some time; but this is not generally necessary. In the severe cases of disease, on the contrary, the dose may be considerably increased, and should not be given up until perfect cicatrization has occurred.

I must again repeat that too great stress can not be laid on the admirable re-

sults which follow the use of iron in phagedæna. I have, to the best of my power, described the cases in which I have found it most useful, and I doubt not but that others will find it answer, particularly if the cases are well selected, and the distinctions between inflammatory and phagedænic chancres are borne in mind.*

SECTION V.

SLOUGHING PHAGEDÆNA.

This is not a complication often met with in private practice, and even in London hospitals in the present day the disease is of rare occurrence. The following may be taken as a very well-marked instance of the affection, which I had an opportunity of witnessing at St. Bartholemew's hospital, in the month of July, 1819, under Mr. Lloyd's care. The disease occurred in a female, about twenty-eight years of age, who had lived at Woolwich, and was brought to the hospital, with phagedænic sores about the vagina; one of these spread toward the thigh, on its inner side; the disease appeared to implicate principally the skin and sub-cutaneous cellular tissue, and became as large as a cheese-plate, in spite of all the remedies that were used. The edges were very irregular; there was an areola, extending perhaps half an inch from the edge, it was exquisitely tender, of a pinkish or brick-red hue, and felt infiltrated with serum. On the inner edge of this areola, the epidermis was raised as in a burn, the skin white, and converted into a substance like adipocere, or what we find in phlegmonous erysipelas; it was however firmly adherent, and was as tough as wet chamois leather, which it resembled. This in about twelve hours would become black, as the parts beyond became destroyed. It was thus that the disease appeared to extend its ravages. Its progress was stopped by pure nitric acid for a short time, and then we observed the areola commencing, which was soon succeeded by the white structure, and lastly, the part became converted into a black slough; in the centre of this immense sore, above spoken of, the black sloughs had fallen away in the poultice, and pale flabby unhealthy granulations were seen. Nothing has ever struck me more forcibly than the fact (noticed likewise by Mr. Lawrence, see Medical Gazette, vol. i., 1849, and 1850) that in some of the worst cases of sloughing phagedæna, the general appearance of the patient is totally at variance with the terrible local mischief. You enter a foul ward in London, where such a patient is; the stench is intolerable in spite of all means to remove it; you see healthy-looking girls, and yet on removing the clothes, you notice large sloughing phagedænic sores, that *à priori* you might imagine incompatible with the patient's present condition. In some instances there is a little fever, and the tongue is slightly coated, but this is by no means necessary; and I have seen persons complain only of the local pain, while the tongue has been quite clean during the whole course of the disease; and yet, until proper treatment is employed, the suffering is so severe, that a patient is unable to sleep; the disease all the time making great progress.

During the time I studied at St. Bartholemew's, this disease was very familiar to the students. The cases came in great number from particular districts; before the destruction for the purpose of building St. Katharine's Docks, an alley, then existing on the banks of the Thames, called Swan Alley, used to

* Mr. Aston Key, in Guy's Hospital Reports, vol. iv. p. 465, strongly recommends the iodide of potassium in these cases. I have often seen this remedy employed, and should recommend its use, did I not now know the superior advantage of iron, but still in certain anomalous forms, particularly the serpiginous, the iodide may be used.

supply the hospitals with victims of this complaint, causing enormous sloughing of the genitals, and exposing the femoral artery, and endangering the life of the patient. Sir Astley Cooper says: "Sometimes the labia and nymphæ slough away, and in this way it is so many lose their lives. I visited one day the St. Giles' workhouse, and in a small ward belonging to the medical establishment, I saw seven cases of sloughing chancre; and of these *seven, five died*. It is almost impossible for them to recover when there is such a destruction of parts. If you inquire into the history of the case, you find that it first began with a few pimples; the unfortunate female will also tell you that she continued to walk the streets night after night exposed to vicissitudes of temperature; that she indulged in the use of spirituous liquors in order to support her declining strength. The disease thus occurring in a constitution destroyed by irregularity of habits, the patient has but a very slight chance of recovery. If one of these miserable cases could be depicted from the pulpit as an illustration of the evil effects of a vicious and intemperate course of life, it would, I think, strike the mind with more terror than all the preaching in the world. The irritable state of the patient in which the disease occurs, leads to the destruction of life, and thus it is that such a great number perish. If I said that I saw *twenty* of these cases in a year I should not exaggerate."—*Sir A. Cooper's Lectures*, p. 556, sixth edition.

I lately called at St. Giles' workhouse, and the medical officers assured me that these cases are no longer met with. Many of the lowest haunts of vice are destroyed, prostitutes drink less spirits than formerly, and the authorities would not suffer seven women laboring under phagedæna to be placed in the same ward. Lastly, the treatment of these cases is better understood, and the disease not generally allowed to go on unchecked. It is, then, from a combination of precautions that syphilis in its most direful forms has diminished; let us hope that if during the last twenty years this progress has been made, another similar period will have brought about no less improvements, and that future boards of health will still further check the progress of this fearful form of the complaint, which happily for the poor prostitute, is only now occasionally met with.

THE TREATMENT I should pursue if called on now to prescribe for a cure of sloughing phagedæna would be similar to that of the gangrene of the penis, as detailed at page 267, but, of course, bleeding would be out of the question; removal into pure air or a well-ventilated room would be indispensable, and a local and general application of laudanum, so as almost to narcotize my patients, would be the plan I should follow. The diet should be generous, and port wine should be ordered, and given by a discriminating person, taking care that the stimulus does not bring on too much reaction. As long as wine was well borne I should continue it, and take every precaution to destroy any offensive smell, by the free use of disinfecting agents, and have no fear of infection being conveyed by sponges, as mentioned by Earl. If this treatment did not at once check the complaint, I should not have the slightest hesitation in at once destroying the slough by strong escharotics, and among others, I should use pure nitric acid, as recommended by Lawrence and Welbank; the latter surgeon thus describes the plan: "If the disease is not far advanced, I at once apply the undiluted acid, after cleansing the surface with tepid water, and absorbing the moisture with lint. When, however, there is a thick and pulpy slough, it is better to remove as much as possible with forceps and scissors, before the application is made. The surrounding parts being then protected by a thick coating of lard or cerate, I proceed to press steadily and for some minutes, a thick pledget of lint, previously immersed in the undilute acid, on every point of the diseased surface, till it appears converted into a firm and dry mass. The parts may be then covered with simple dressings, and evaporation kept up by cooling lotions."

"It is always prudent, and often necessary, to remove the eschar at the end of sixteen or twenty hours, when such further measures may be adopted as the case seems to require. When the patients have become perfectly free from pain, and the parts below the slough, on its removal, appear healthy and florid, the sore may be treated as a common wound or ulcer; though I may observe that stimulating dressings are generally most advantageous.* If, however, the patients have suffered any recurrence of pain referred to some particular point, or to the general surface of the sore; if the affection be slight or severe, and the remaining slough deep or superficial, I would advise the reapplication of the undilute acid. The result is, that patients who have known no reprieve from suffering for weeks, and whose constitutions have become greatly disturbed in consequence, within a very short space of time sleep soundly and tranquilly, then fever subsides, and in a few days, we should with difficulty recognise the individuals whom we had before seen subjected to the painful progress of a malignant and, too often, fatal malady."—*Med. Chirurgical Transactions*, vol. ii., p. 361.

At page 275, I mentioned a very severe case of sloughing phagedæna, which was treated by nitric acid; this escharotic checked the progress of the disease for the time, but in twelve hours after, the sloughing again recommenced, although the patient had opium in doses of five grains of pil. sap. c. opio every three hours, with port wine and meat diet; the acid was repeated three separate times, and the opium; even in these large doses, not having disagreed, the tongue remaining moist and clean, Mr. Lloyd determined to give Battley's solution, thirty drops every two hours, increasing the dose during the following thirty-six hours; and it was the opium which ultimately cured this patient, showing that nitric will not succeed, although opium will, given (as is often necessary) in very large doses. This case, like others that I have witnessed, induces me then to strongly urge my readers to prescribe opium early, and employ acid only when other means fail, which I believe will be rarely the case.

SECTION VI.

SERPIGINOUS OR CREEPING CHANCRE.

THIS is a form of chancre, fortunately for the surgeon, very rarely met with in private practice; but there is scarcely an hospital or a ward devoted to the treatment of syphilis which does not contain one or more such cases during the twelvemonth. By this I do not mean to say that the numbers are increasing, for the same patient usually runs the round of these institutions, and is turned out at the end of many months, or, after finding no relief from one surgeon, in despair seeks the advice of another, where, unfortunately, as little success usually follows, until, under some accidental circumstance which the surgeon can not appreciate, the case gets well; whether caused, however, by the remedy, or by some improvement in the constitution, it would be hazardous to say.

COURSE OF THE DISEASE.—In Plate VII. of M. Ricord's admirable work on venereal disease, an excellent drawing of this form of disease is given, and on the thigh is an artificial sore which presents all the characters of the original ulcer. We are told that, on the 24th of July, 1839, inoculation was performed; three days after a pustule was observed, the evolution of which was very slow, and which put on the form of ecthyma. The disease went on uninterruptedly, although the patient six days after (that is, on the 3d of August) was slightly

* In this respect I should differ from Mr. Welbank, and should employ the opium solution.—W. ACTON.

salivated, in consequence of having taken corrosive sublimate and sarsaparilla, thus proving that this form of sore will occur during the time that the system is loaded with mercury, and that mercury may not exert any influence on its course, as we see it did not on its origin. To describe, however, the anatomical characters of the sore, I can not do better than copy those mentioned by M. Ricord in his "Clinique Iconographique de l'Hôpital des Veneriees." He says (September 6, a month after inoculation had been tried, and nearly seven months from the time the complaint showed itself) :—

"A large ulcer existed covering the entire lower surface of the glans, moulding it like the mouth-piece of a flute. This ulceration has destroyed at the same time about half the thickness of the glans, forming the balanic portion of the urethra. The bottom of the ulcer was formed by a species of grayish pulvaceous, or semi-membranous secretion, irregularly disposed, strongly adherent, and pierced here and there (if I may so express myself) by granulations of an unhealthy nature, and of a red, violet, and hemorrhagic color. This ulcer, which had reached the base of the prepuce, was surrounded with a ring of firm œdema, but was deficient in specific induration. The edges, cleanly cut, did not present any tendency to become undermined."

"In the left inguinal region, a cicatrix of considerable extent and healthy in appearance was seen; but at the outer edge of this cicatrix we met with an ulcer exactly similar to the one on the glans, except that its edges were undermined. On the thigh two ulcers exist, the result of inoculation, which had not been destroyed, the first ulcer of considerable size being divided into two portions by incomplete cicatrization. The most minute examination could not discover the slightest trace of secondary symptoms."

During the next six weeks the patient took hydriodate of potash, iodine, and bitters, the sores increasing in size, sometimes a little better, then relapsing again. At the commencement of November, mercury was tried, the edges of the sores were destroyed with caustic and brought together with strapping, and at the end of nearly eight months from the time of entering the hospital, the patient left quite well, having taken mercury during more than four months, and having had the sore locally treated with caustic.

DIAGNOSIS.—The obstinacy of this sore serves to distinguish it from all others. By the French it has been called *rongeur*, or nibbling sore, as it quietly and almost invariably destroys the tissue, creeping on extensively on one side while it heals on the other. Here there is no disintegration of tissue, or breaking down and liquefaction of the part, as we noticed in speaking of phagedænic chancre. The secretion of the serpiginous sore is purulent, the base of the sore is firm, there is a little œdema but no induration, the edges are not thin or undermined. The surface of the ulcer is covered with the adherent tough secretion; granulations are present, though of an unhealthy nature; there is no dark or livid areola; but still the disease quietly creeps on, and is not amenable to ordinary treatment. Another characteristic is, that during a week or a month the surgeon flatters himself cicatrization is rapidly taking place, and is all but effected, when the slow destructive process again assumes its sway, under no cause that we can appreciate; it becomes checked of its own accord, and again cicatrization recommences.

PROGNOSIS.—No form of sore is so difficult to cure as this, in spite of all our remedies the disease going on, as seen in the preceding pages. At one period of the year some modes of treatment seem to be very efficacious; but, perhaps, during the next twelve months the same surgeon will candidly avow that similar means have failed. But its obstinacy is the most prominent feature; the same destruction of parts as seen in phagedæna or sloughing phagedæna is not to be dreaded. The serpiginous chancre is a superficial creeping sore; it does not burrow or extend in depth, but it will travel over a large surface,

Rarely, however, is a large surface at once in a state of ulceration, but the sore has a great tendency to creep on by the external edge, forming an irregular ring, which is gradually enlarging; and in proportion as ulceration creeps on, cicatrization follows, leaving a line or chasm of ulceration, which gives an irregular shape to these sores, which may be compared to a fairy-ring or a horse-shoe.

The prognosis relative to the occurrence of secondary symptoms is very favorable. Rarely do we see secondary symptoms follow as sequelæ of this form of ulceration, however obstinate it may have been. As soon as the ulceration has healed no subsequent ill effects are to be dreaded; the general health may remain as good as ever, and this is the only consolation the surgeon is able to give his patient during the persistence of this tedious form of chancre.

TREATMENT.—Notwithstanding the unfavorable description here given of serpiginous chancre, I should try sedatives, iodide of potassium, and tonics, before resorting to more severe remedies. If, however, in a short time no benefit followed, I would recommend tincture of iodine, Peruvian bark, charcoal, or I should try the result of filling the sore with powdered cantharides. I would next destroy the margin and bottom of the sore with Vienna paste, proceeding gradually from one part of the ulcer to the other, provided it be very large, destroying the surrounding tissues to some extent. This treatment may be combined with mercury, given cautiously, and continued for a considerable length of time, bearing in mind that the remedy should at once be left off if it seems to disagree, and recollecting that mercury should be given in reference rather to the state of the constitution than to the special character of the disease. The result of my experience is, that patients afflicted with serpiginous sores bear the remedy well; the firm edge of the sore seldom takes on phagedænic action, nor does the general health suffer. In case of the occurrence of one or the other result, the mineral must be left off, but may be employed again at a later period. My readers must be well aware that I am no indiscriminate advocate for mercury, but experience shows that the local sore presents nothing unfavorable, and that neither the disease nor mercury given to cure it presents objections; I should have no hesitation in trying the remedy, particularly if, without the employment of mercury, a cure can not be expected. I, however, by no means would maintain that mercury is invariably successful. I fear disappointment will occur; at least I can bring to my recollection cases that have remained uncured in the wards of the most decided mercurialists; whether this has been the effect of the mineral being injudiciously given I would not pretend to say. I do not, however, altogether despair of curing this virulent affection, but trust that, by studying its various phases, we may arrive at more certain modes of treatment than we at present possess. Before concluding this subject, I would state that great advantage may be occasionally derived from perfect rest, and supporting the parts with strapping. Patience and confidence must be the surgeon's motto in such cases as these.

SECTION VII.

INDURATED CHANCRE.

If any one symptom of venereal diseases can be called more important than another, the united voice of the profession has declared it to be, the induration which attends primary sores—a subject well deserving the consideration of those who are called on to treat syphilis in its primary or secondary forms.

The experiments detailed at page 236, have demonstrated that the syphilitic

virus coming in contact with living animal tissues produces certain definite effects. In some cases, however, but not in all, induration, in one or other of the forms presently to be mentioned, will come on; and observation has proved, that when such induration does appear, secondary symptoms invariably follow. Experiment and observation induce us further to believe that simple uncomplicated syphilis, when unattended with induration, is a trifling local malady, and that secondary symptoms are not to be dreaded.

Previous to the complete series of experiments which have established these facts, surgeons denied that a sore could be a chancre unless it was indurated: as we have, however, no reason to believe, that the poison is one and the same, whether induration be present or not, it behoves us more accurately to study induration, in the hope that it will assist us in solving the difficulties surrounding this part of pathology.

With these preliminary observations I shall at once pass on to the subject of indurated chancre, which, I think, fully deserves the consideration of my readers.

HISTORY.—Whatever difference of opinion may exist on the antiquity of the venereal disease, certain it is that more than three centuries ago—namely, in 1514—Jean de Vigo thus described indurated chancre,* and he is the first who pointed out this symptom. He seems, however, to have laid little stress on it, and only casually mentioned it.

From this time we find induration forming one of the symptoms of chancre, and although some authors may have laid more or less stress upon it, and considered it of more or less importance, still its true value was little known. Astruc mentions it among many other diagnostic marks of chancre, but gives us no reason to suppose that he placed that dependence upon it which it deserves.†

Our countryman Hunter is asserted by some to have first been aware of the value of induration, and, in the present day, indurated chancre is often called a Hunterian sore: but such nomenclature is very objectionable, as Hunter only described one form of induration, whereas, as I shall presently show, we meet with several types which do not answer to his description. Other authors assert that Hunter did not lay that stress on induration which some have believed. I shall introduce his very words, and let my readers judge for themselves.‡

Evans, Carmichael, Wallace, Babington, and Ricord, have successively called the attention of the profession to this symptom, but it is to the latter gentleman we are particularly indebted for having pointed out the vast importance to be given to indurated chancre, where it exists, as well as the serious consequences it gives rise to.

COMMENCEMENT AND COURSE OF INDURATION.—The surgeon who has opportunities in private practice of observing sores in their earliest stages, finds the first indications of induration in the conversion of the slight puffiness around

* "This disease is contagious chiefly if it chaunce through copulation of a man with an unclean woman, for the beginning thereof was in the secret mēbers of men and women, we little pushes of blew colour, other whiles of black, some time of whitish, with a *certaine hardness about the same*, which pustules could not be healed by medicines applied within or without, but that they would embrace the whole body with ulceration of the generall partes, even returning again after they were healed."—*Translation of Jean de Vigo's Works in College Library.* Chap. "Of the French pocks not confirmed"—p. 253. 4to.

† "Therefore, all round, orbicular, *callous*, stubborn ulcers, that lie deeper than the skin, are full of white or livid mucus at the bottom, and appear upon the genital parts which we have described, are to be esteemed venereal."—*Astruc on Venereal Diseases, translated into English.* 4to. 1754.

‡ "A chancre has commonly a thickened base, and although, in some, the common inflammation spreads much farther, yet the specific is confined to the base."—*Works of John Hunter, by Palmer, vol. ii., p. 316.*

"A thickening of the part comes on, which at first, and while of the true venereal kind, is very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly. Its base is hard, and the edges a little prominent."—*Loc. cit., p. 319*

a common sore into some thickening, which gradually increases, until, in the words of Hunter, "it is very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly. Its base is hard, and the edges a little prominent." Such a sore is attended with slight pain; it secretes little, and in fact makes but trifling progress, and may exist for some weeks in this chronic state. Induration rarely commences before the fifth or sixth day of the existence of chancre, and Ricord states it is generally not to be dreaded after the fifteenth day, if at that time the chancre has not presented marks of thickening.

In other instances, an excoriation following connection does not heal, although only a slight discharge (which can hardly be called pus) takes place; the base becomes somewhat thickened; this soon acquires firmness, and may assume a stationary character. The induration appears to bear an inverse proportion to the ulceration, which, however, may still exist.

In more uncommon cases, I have observed a moist surface, perhaps as large as a sixpence, looking like a patch of eczema, with ulceration barely observable on it. The base of this becomes thickened, and then indurated; the surface may cicatrize, leaving only the induration. Some authors admit the imbibition of the virus without previous abrasion. One such apparent case has come under my notice; still I must believe it to have depended upon speedy cicatrization of a small sore.

We occasionally notice that a sore or excoriation will have healed entirely, when the patient or surgeon may be surprised at the cicatrix becoming gradually indurated until a cartilaginous mass is formed, but confined to the situation of the sore which had previously existed.

In whatever manner indurated chancres may have commenced, their progress is usually characterized by little if any pain or discharge. The consistence of the induration seems to increase, as well as its extent, until it becomes like a piece of cartilage of a clear pearly color; no vessels can be seen permeating it, and in this respect it differs from the surrounding surface. In some of these cases the ulceration will heal gradually; in others it will increase to a considerable extent, or it may remain stationary, in spite of all our local means to assist cicatrization. If we abstain from giving mercury, and the case is allowed to run its course, secondary symptoms will appear in a few weeks, and after an indefinite time the induration may abate, and ultimately disappear. In other instances, when the case has been neglected, or if friction of this indurated mass accidentally follows, ulceration will occur, depending, as I believe, on stimulating applications, or excessive inflammatory action, or unusual rapidity in the formation of the induration, incarcerating as it were the distended cellular tissue within the areolæ of the infiltrated dermis, and causing mortification of the part. Lastly, the indurated sore may be covered with granulations seated on a hardened base, putting on the characters of the *ulcus elevatum* of Evans, or it may assume the characters of *condylomata*.

When mercury is given in the manner hereafter to be recommended, we witness a very peculiar effect on the induration: the circumference of the indurated mass becomes redder than usual; there seems to be increased action of the vessels; the transparency becomes less and less, and absorption of this interstitial deposite takes place rapidly, particularly if the callous mass has existed only a short time.

CAUSE OF INDURATION.—Inoculation of the virus in every form of chancre has now clearly established the fact that induration is not a necessary consequence of syphilis. Unfortunately, however, it too frequently attends the complaint. Under what circumstances, then, it is most frequently observed, deserves the attention of the profession; and to this point I beg to call the attention of my readers, particularly as authors are silent upon the subject, and

everything relative to induration must be of high importance in forming correct ideas on this most interesting symptom. It might be expected that surgeons of large experience would have been able to point out the influence of various external agents on the causes of induration; but, unfortunately, observation furnishes little information, and that principally of a negative character.

Induration is very frequently observed in those parts of the system most freely supplied with loose cellular tissue; we meet with it very constantly in the prepuce, very rarely on the glans, though it is very common in the folds between the prepuce and glans.

Neither sex, age, constitution, nor season, appears to influence it. I have met with it in very early infancy, and have witnessed it in persons of sixty; I have seen it, perhaps, oftener in the male than in the female; I find it in the blond and in the dark-haired, in the scrofulous and in the healthy; I witness it in the patient who comes from the country, and the resident in town; I meet with it in the summer as well as in the winter.

Climate would seem to exert a certain influence upon it. In a lecture recorded in the seventh volume of the "Provincial Journal," page 23, M. Ricord is reported to have said, in 1834: "My excellent and learned friend Mr. Carmichael, a highly respectable authority in syphilitic affections, examined with me the patients of my wards (wherein you will acknowledge there is no dearth of the various symptoms), without once finding an instance of what he calls true chancre."

This statement induces the belief that indurated chancre was an uncommon symptom in 1834. In September, 1847, I wrote down the following observations in my note-book, on my return from this same hospital, during my visit to Paris:—

"First on the list, as regards the frequency of the affection, stands indurated chancre, which presented itself in 23 cases out of the 112 patients then in the wards. In 10 cases it was the sole symptom; in 13 cases it was attended with secondary symptoms.

"My recollection carries me back to ten years, when I was a student under Ricord, and yet I can not believe that induration was such a common symptom as it appears now. On stating this to the professor of the Hôpital du Midi, he admitted it in part, but seemed to think it might be a coincidence, or an accidental circumstance, depending upon his house-surgeon admitting, generally by preference, sores that presented an indurated character. I am, however, disposed to view the circumstance as singular, and worthy of further consideration. It is another of those many facts relative to induration, of the cause of which we are in perfect ignorance."

In returning to Paris in September, 1850, the same large proportion of indurated chancres occurred: out of the 112 patients then in the wards, 33 presented unequivocally well-marked indurated sores.

Wilde, in his excellent work on "The Institutions of Austria," calls the attention of the profession to the immunity of the Austrians from indurated chancre; and we have statements that in southern climates similar occurrences take place, or rather that secondary symptoms are very uncommon, and, *à fortiori*, indurated chancre must be rarely met with, although writers have not said so, not generally being aware of the importance of this the common antecedent symptom.

In passing through the wards, or in seeing the out-patients of London hospitals, a great difference will be found in the number of indurated chancres; and it occurs to me that the immunity, in some institutions, may depend upon the treatment. Thus, in procuring indurated masses to examine, I have in vain sought for them in the practice of those who give five grains of blue-pill night and morning to all forms of primary sores. I have met with them in

larger abundance in institutions where mercury is not so indiscriminately given ; and I believe treatment in this country has a great influence in preventing the occurrence.

Among other causes of induration, the treatment of primary sores has been supposed to play a considerable part. Irritating applications, caustic, &c., have been accused of producing it. It is true that we meet with induration after the application of caustic ; but it is no less remarkable that it follows after water-dressing, black-wash, the most simple ointments, or even when all treatment has been neglected.

The constitution of the patient has been said to contribute to induration, and at one time I was disposed to believe that the clear complexion seen in scrofulous individuals peculiarly predisposed an individual to an indurated chancre ; but I have met with so many cases in persons who have thick complexions, and who have red or dark hair, that I have given up this idea. It is a curious fact that a man may contract chancre at one time of the year, and it will not become indurated ; he may recover, and in a few months contract disease again, when the sore will be characterized by induration. Such cases might lead one to agree with Mr. Carmichael, in the existence of a plurality of poisons, but observation on a large scale contradicts such an idea, and corroborates our experiments on inoculation, that the syphilitic poison is one and the same, modified according to the constitution it attacks ; for in private practice we find instances of a male with an indurated ulcer contaminating a female with a simple uninjured sore, and *vice versa* : this is not to be explained on the supposition of a variety of venereal poisons.

Authors, as I stated above, have almost entirely neglected to give any opinion on the presumed nature or object of induration. Wallace forms nearly the only exception, and he calls induration "a protective process, or one of those processes that are set up to limit the effects of the venereal poison, and to repair the injury of texture which may have resulted from the action of this poison."

—Page 306.

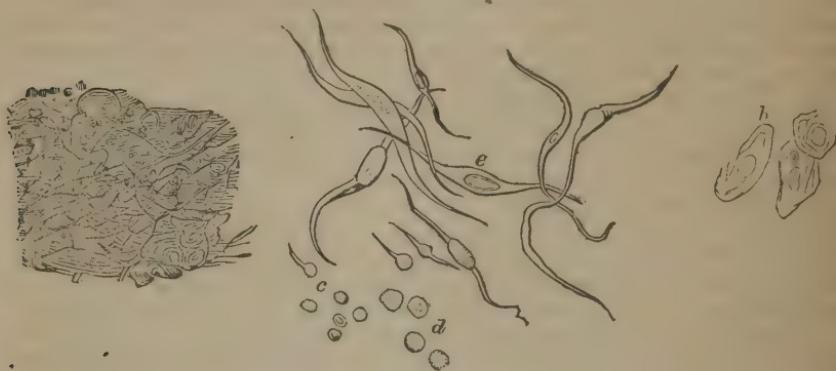
I was once disposed to believe that such might be the object of induration ; but experience proves that the interstitial deposite by no means limits the effects of the venereal poison, as secondary symptoms invariably follow ; however, induration appears to modify the local spreading of sores when it comes on in the early stages of chancre ; but let it be remembered that we are unable to produce induration, or to remove it rapidly. It occurs in some, not in other instances ; it is almost specific and peculiar to the syphilitic virus, and does not usually attend any other form of sore. When present, ulceration generally does not spread, probably on account of this barrier to its progress, but may not the same cause which occasions this interstitial deposite check the spreading of the ulcer ?

Wallace himself, in the next page, says : "Now, it may be asked—What is the immediate cause of that excess of interstitial deposition which characterizes indurated primary syphilis ? It must be answered, that in many cases we do not observe the operation of any adequate cause, and we must attribute it to some peculiar character of constitution ; but on other occasions, the influence of artificial applications in exciting induration is very obvious."

After what has preceded, I fear we can do no more than conclude that induration is one of those vital processes dependent upon causes we are at present ignorant of, and we must be content at present to watch its development in the hope that one day some additional light may be thrown upon this part of pathology.

MICROSCOPICAL EXAMINATION OF INDURATION.—In the full expectation that the microscope might clear up all doubts on the true structure of induration, (which, as shown in the preceding pages, is peculiar to chancre, never attend-

ing any other form of sore, except as a very rare and accidental symptom), I carefully, in 1846, removed with the knife, masses of induration in its various stages, and immediately forwarded them to Mr. Busk, whose researches by means of the microscope are so well known, and that gentleman has favored me with the accompanying drawings and descriptions.



Induration of Chancre.

a. Section, showing the fibrous stroma, with granular albuminous deposite, 150 diameters; *b.* Epidermic scales; *c.* Blood discs; *d.* Free nuclei; *e.* Caudate cells (fibro-plastic); *b*, *c*, *d*, and *e*, are magnified about 300 diameters.

M. Lebert, of Paris, subsequently examined indurations, and has fully corroborated Mr. Busk's investigations.

The microscope, however, has added little to our previous knowledge, the caudate or fibro-plastic cells, delineated under *e e*, "are," as Mr. Busk himself says, "found pretty generally where reparation or cicatrization is going on, and can not consequently be themselves regarded as a peculiar element in the induration of chancre, or as indicating more than the great efforts nature is disposed to make to limit or prevent the absorption of the syphilitic poison. All, therefore, so far as I know at present, that can be said with regard to syphilitic induration is, that it does not present any special element distinguishing it from other cicatriform indurations. But there still remains the very peculiar property in the syphilitic virus to produce this induration. It is impossible also to say that the caudate corpuscles may not have something of a special nature, for their mere resemblance to similar corpuscles, occurring under other circumstances, would not logically prove the identity of the two, when it is considered that all morbid growths of a self-propagating nature are made up, in a great measure, of nucleated cells, among which, except in size perhaps, it would not be easy to determine any very marked differences."

COMPLICATIONS.—Indurated chancre is attended with fewer complications than most other forms of primary syphilis. As above observed, inflammation is rarely met with interfering with the course of induration. Suppurating bubo seldom attends indurated chancre, but induration is almost always followed by an enlarged state of the inguinal glands. This is so common, that in cases of difficult diagnosis M. Ricord decides upon a sore being truly indurated by the occurrence of enlarged glands in the neighborhood. In proportion as this enlargement is rare in phagedænic chancre, it is common in the indurated variety. This enlargement takes on, like the sore, a very chronic form, and vanishes only with the disappearance of the ulcer. One of the most common and tiresome complications is a general or partial thickening of the prepuce, preventing the patient from retracting the foreskin, thus allowing the secretion to accu-

mulate, particularly if the indurated masses are at the orifice. I have above alluded to the ulceration of the surface of the sore, and need not here, therefore, speak of it.

In some cases the sore, instead of healing from the circumference, will become converted into a spongy granular surface, looking like a large condyloma : and thus a primary symptom is changed *in situ* into a secondary symptom. In other instances irregular cicatrization will follow, and the granulations becoming exuberant, an ulcer, called by Evans *ulcus elevatum*, results, and which requires cauterization before it will heal.

DIAGNOSIS.—After the description previously given of induration, it may seem almost unnecessary to dwell on diagnosis. Experience, however, shows that the tyro in venereal diseases can not at once decide on the nature of induration. Frick, of Hamburgh, placed some corrosive sublimate between the glans and prepuce, and asserted that induration, similar to that following true chancre, was observed. M. Ricord admits the fact of induration being thus produced, and states it to depend upon plastic infiltration.* Now I presume—for I have not seen the trials—that such induration will disappear as soon as the irritating cause has been removed, and hence the diagnosis will be easy.

In practice, sores will present various shades of more or less doubtful induration or hardening, which get well without mercury, and are unattended with secondary symptoms. Thus we may have hardness of the canal of the urethra, caused by effusion of plastic lymph ; we may likewise have the lips of the urethra infiltrated and hardened, giving us reason to suppose that indurated chancre may exist ; we meet with a form of induration after irritating applications, which however rapidly disappears when soothing treatment is followed. We likewise meet with cases of encysted chancre and œdema, which assume some of the characters of induration. All this shows, however, that there is a form of fictitious or bastard induration, which it is of great importance to distinguish from the true form. To assist, then, the diagnosis, the surgeon should, on discovering traces of induration around a sore, at once direct his attention to the groins ; in cases of true induration, there is an almost absolute certainty of finding the sore attended with enlargement of several of the inguinal glands, which may be readily felt, but which never suppurate, unless when accompanied with complications.

In cases, then, of enlarged glands attended with indurated sores, we say the induration is of a specific character ; when unattended with buboes, great doubts should be entertained on the specific character, and we should pause before giving mercury.

PROGNOSIS.—The appearance of induration around or beneath a sore is always to be regretted, as the consequences are usually very serious. In the first place, as I have above shown, the sore will not be likely to heal, but tend to remain in *statu quo*, or the ulceration or induration be likely to increase, and the duration of one or both may be almost indefinite. I have seen induration last more than a twelvemonth. If it heals, the cicatrix is liable to take on ulceration on the slightest cause, and a very intractable sore results. If these then are among the local effects of indurated sores, the general ones are no less to be dreaded : a few weeks only will elapse before secondary symptoms may show themselves, attacking the skin or mucous membrane, and if cured, will probably be followed by relapses. It is very true, that unless the case is mismanaged, neither rupia nor phagedænic affections of the throat will generally follow these indurated sores, but the patient will again and again (perhaps for years) have chronic affections of the skin.†

* Provincial Journal, vol. vi., page 459.

† And here I must agree with Mr. Carmichael in his belief that indurated sores will be followed generally by a peculiar form of secondary symptoms. These eruptions are usually found to be scaly, and attended with sequelæ, which seems to have a strict relation to induration ; I believe to that gentle-

Such is the course of the disease when the indurated chancre is allowed to run its course, as may be witnessed in the practice of those who refuse to give mercury. The prognosis of indurated chancre is somewhat more favorable in the cases where mercury is given, but even in these cases (unless the mineral is continued for a long time) relapses are very common, for when once an indurated chancre has attacked an individual, no surgeon can say that secondary symptoms will not occur, although the treatment hereafter to be recommended has been found the most successful.

The writer who takes the most sanguine view of chancre is Mr. Key, in the *Guy's Hospital Reports*, vol. iv. At page 426 he says: "When combined with the other evidences of poison, induration is of some value in determining the nature of the sore; but alone, it is indecisive of the poisonous character of an ulcer, especially when seated in the cellular membrane deep beneath the cutis. . . . The deep chronic chancre of the corona glandis, mild in its character, and usually harmless in its effects, will last for months, and acquire a degree of induration that gladdens the heart of a *soi-disant* disciple of Hunter, grieved to find the good old chancre fast disappearing from the land." Almost all other authors that I have consulted agree in the importance of induration; but I have introduced Mr. Key's words, that my readers may hear both sides of the question; however, let them, before coming to a conclusion, remember the doubtful cases alluded to under the head of diagnosis, when that gentleman's views will pretty nearly coincide with those of other practical writers.

The surgeon must then, I think, view induration as a very serious affection; for my own part, when a patient consults me, and induration has already appeared, I tell him at once my opinion of his case. I point out its existence, and inform him of the consequences; and in this way induration is of value; for long ere secondary symptoms appear, their occurrence may be foretold, and the patient is not unaware of the probability of their appearance. Induration is of value likewise as the touchstone for the surgeon to know when mercury should be given: it likewise tells us for how long a period it should be given; it is our hydrargyrometer, as Ricord calls it, and a very valuable one it will be found, as I shall explain in dwelling on the treatment.

TREATMENT.—In speaking of the treatment of indurated chancre, I shall first allude to local applications, and subsequently dwell on general treatment, although both one and the other must be employed to dissipate this formidable symptom.

Local Treatment.—It has been shown that induration may be attended with simple ulceration, or that gangrene may come on in the centre of the ulceration, or the surface may become excoriated, and, lastly, that induration may exist without the slightest trace of ulceration, or may follow in the spot where a sore has existed, but which may have entirely healed. Now, in either one or other of these cases, the local treatment required may be somewhat different. If the surgeon have reason to believe that the induration attendant on a sore depends upon any irritating application the patient may have used, all such exciting causes must at once be left off, and water-dressing substituted. If induration disappears, the alarm of the surgeon vanishes, and the patient may be assured that he stands in but slight dread of secondary symptoms. If, however, under this treatment, the induration increases, the case comes under one of the heads we are about to describe.

Should the surgeon not be consulted until molecular gangrene has commenced in the indurated chancre, water-dressing would alone prove ineffectual, and we must have recourse to opium, or the ulceration and induration will increase very rapidly. I formerly recommended an ointment composed of

man we must give the credit of having called public attention to this view of the subject, which subsequent experience has confirmed. (See Carmichael's Clinical Lectures, page 151.)

calomel and opium, but I have frequently found this application too irritating. I usually now desire the patient to use a lotion containing two drams of the watery extract of opium, carefully rubbed down in a pint of water, or I order a quantity of crude opium, the proportions varying from one dram to half an ounce, to be boiled for half an hour in a pint of water, strained through tow, and the lotion kept constantly to the sore. I am obliged to have recourse to this solution, as I find the spirit, or acetic acid, contained in the sedative preparations of the Pharmacopœia, even when largely diluted with water, cause great pain to irritable sores. It must, however, be remembered that these aqueous solutions do not keep well, they should therefore be made in small quantities at a time in warm weather.

The practitioner need not expect the local application of opium to effect any other purpose than that of allaying pain; it will be enough, if, in doing this, opium should prevent the ulceration extending. It must be borne in mind, that the ulceration does not depend upon acute inflammation, as in phagedæna, but upon effusion of lymph into the cellular tissue around the sore, thus strangulating the tissues, and causing their death. This effusion must, as we shall presently see, be removed by general treatment.

When called on to treat simple excoriation on the surface of induration, water-dressing may be resorted to; or if there be any tendency on the surface of the excoriation to become converted into condylomatous growths, the very best application is sprinkling the parts with calomel, and placing dry lint between the glans and prepuce. I generally object to the employment of ointments, although many surgeons recommend them. I have found greasy applications become quickly rancid, from the heat and secretions of the parts, and thus produce much mischief. The idea formerly prevalent, that mercury would thus enter the system, has nearly exploded, inasmuch as most surgeons now believe that in all these cases, sores present a secreting, and not an absorbing surface, and our object is the opposite of encouraging secretion, as we no longer imagine Nature capable of throwing off the peccant humors, although some still treat syphilis as if this were possible.

If, then (by means of one or other of these plans), ulceration, gangrene, or excoriation, has yielded, the induration alone remaining, we may be asked how is this to be removed.

Authors* have recommended the local destruction of these masses of induration; the quotation given below will, however, show the danger of applying caustic, and Wallace† corroborates this opinion. I can, from personal experience, speak of the objection to removing masses of induration, in imitation of Delpech,‡ by the knife. During the time I was making my investigations on the microscopical appearance of induration, I removed several masses of induration from different persons, and in one instance the surface of the incised wound took on the same indurated appearance, although the original indurated mass had been entirely removed by the knife; I may mention that no mercury had been given to this patient. The case is so far interesting, as pointing out that the germ of the disease extends further than the mere mass of induration, and that something more is required than mere excision, and of this I now purpose to treat.

General Treatment.—My readers must be already prepared for the statement,

* "Quand une cicatrice a déjà reconvertis la tuméfaction, nous faisons entamer cette dernière par la potasse; et à la chute de l'escarre, la plaie est touchée plusieurs fois avec la caustique mercurielle. Il faut être circonspect dans l'emploi de tout autre caustique en pareil cas: ces tuméfactions jouissent de la funeste propriété de passer aisément à l'état癌ereux."—*Delpech, Mal. Venerius*, p. 305.

† "But with this recommendation I can by no means coincide; for the application of caustics to these indurations will often cause troublesome and peculiar ulcers and serious consequent disease."—*Wallace on Venereal*, p. 312.

‡ "Si une sensibilité extrême se faisait remarquer après chaque cauterisation, il faudrait y renoncer et pratiquer l'excision de la tumeur avec l'instrument tranchant."—*Delpech, loc. cit.*, p. 396.

that general treatment will be required if we wish to effectually remove specific induration; with the exceptional cases of the spurious hardened sores alluded to at page 285, local treatment alone will fail in removing it. In spite of local applications, or when the case has been entirely neglected, the surgeon observes induration increase, or remain in *statu quo* for some weeks; secondary symptoms will then supervene, and we meet with relapses, again and again recurring, the indurated mass remaining as hard as when it commenced many months before; or every now and then, its surface will take on an excoriated or gangrenous appearance, if not controlled by general treatment.

Much has been written of late years on the abuses of mercury, and every practitioner, whatever his opinion may be on the subject, hesitates before subjecting a patient to a course of mercury; but I presume there are few in the present day who dare to treat indurated chancre with local treatment only. To such, the following abridged case from my note-book may act as a warning.

A surgeon who had lived in India, and taken a great dislike to the employment of mercury, contracted indurated chancre in December, 1847. Toward the latter part of January, 1848, he consulted me, and I explained to him my ideas on induration; my patient objected to mercury, stating that his occupation prevented his employing the remedy; his health, he thought, would not admit of it, and he moreover objected on principle to a remedy which he had always dreaded. Finding my patient thus indisposed to follow my advice, I had but to remain a passive spectator, and note the consequences, particularly as at that moment I had several cases under my care of indurated chancres that were taking mercury, and I could draw comparisons.

Black-wash was employed, and the patient determined to attend to his diet and avoid late hours; in other respects to avoid treatment. At the commencement of March, blotches of a bluish livid hue appeared on the abdomen and thighs, the throat became affected, but still the patient objected to employ any mercury; the indurated sore still presented much the same characters of induration.

In November I saw this gentleman, who had been under the care of Mr. Syme, for syphilitic iritis, who prescribed mercury, and he slowly recovered. Now, notwithstanding all the objection which may be made to treat indurated chancre with mercury, I would ask, if the result of such a case as this will encourage any one to follow simple treatment? Let the young surgeon who is entering on practice, consider if it be probable that a non-medical patient will choose to have an open sore continuing many months on his penis. I can assure him that if such treatment is prescribed, the patient will soon consult some one else, who will discountenance this simple plan, and thus damage his professional reputation. But supposing a patient docile enough to submit for four months to have an open sore on his penis, what will he say if iritis or blotches appear? Let those risk it who please, but the surgeon who is commencing practice should well consider this case, and he will avoid similar results, which should not be allowed to occur in the present day.

This and other cases that I could detail, more fully than ever corroborate my opinion, that mercury is absolutely necessary for the treatment of indurated chancre. Whatever difference of opinion may exist on the mercurial or non-mercurial treatment of simple or phagedænic chancre, authors, almost without an exception, agree, that in the indurated chancre mercury is absolutely necessary, either for the dispersion of the local affection, or for the prevention of secondary symptoms. There may be slight differences as to the doses and forms, but on the fact of giving mercury, great unanimity exists.

Although, then, I believe that mercury will be absolutely requisite in specific induration, for the reasons above given, I would not recommend its employment for the first few days after the appearance of hardening. I would always ad-

vise the surgeon to pause before commencing a course of mercury, and see if Nature will not cause absorption of the mass, in the hope that it may not be of a specific kind. Delay is dangerous in many things, but here it is only a wise precaution; in several instances it will enable you to avoid mercury altogether, for supposing the induration to increase, we may always have recourse to the mineral. There are authors who pretend that we should give mercury in the earliest stages of chancre, so that the antidote and the poison may enter the system together. This doctrine might be tenable, provided we held that all chancres require mercury, but as, nine times in ten, primary symptoms do not require mercury, and as, during the first few days, it is impossible to say what sores will become hard, and therefore be followed by secondary symptoms, we should give mercury unnecessarily in nine cases out of ten. The advocates of these opinions have not shown that their treatment is more successful than any other. I have not found it more difficult to treat an indurated chancre that has existed a fortnight than one which has become hard during the last few days; I have observed no severer secondary symptoms follow the one than the other; why should we then give mercury thus rashly? However, in advocating caution, I would not be supposed to recommend the surgeon to put off its use for an indefinite period; if the hardness does not abate, or if it increases without any assignable cause, or if gangrene is set up in the centre of the indurated mass, I would at once commence mercury; for delay can now be of no use, and it is well for the patient to see, that although you do not choose to give mercury, inadvertently, you are not afraid of recommending it when necessary. Patients are often impressed with the idea that you avoid giving them mercury as something very dreadful; they have heard of noses being lost, and think, by your hesitating, that some grand calamity will happen to them. These alarms should be quieted by a true statement of the case; it avoids much misunderstanding or misinterpretation.

In consultation, I have heard the following objections to my views: " You admit the quantity of mercury must be large, and the duration of a course long, to dissipate induration, and even then you dread the occurrence of secondary symptoms; why give mercury at present? why not wait till the occurrence of secondary symptoms? thus you may avoid two courses of mercury."

My reply has been something to the following effect: " Your objection is valid in many cases among poor patients, but the treatment can not be carried into effect among the upper classes for the following reasons: A dispensary or hospital out-patient too often considers himself well as soon as the sore is healed; he absents himself, or, it may be, discontinues mercury too soon. This frequently happens in consequence of the fear of losing his work by attending at a public institution, and perhaps not one in ten goes through a proper course of mercury. Now, as this so often happens, it becomes a question whether it be good or bad treatment to give such a man mercury for an indurated sore, seeing that probably he can not or will not attend the requisite time. Scientifically, the treatment may be right, but the surgeon may be unable to carry it into practice. As expediency is the order of the day, we may have to apply it to the treatment of the poor, and I have often been obliged to follow the plan. But observe the results: the symptoms are more severe and less tractable, and the health suffers permanently. It is true that it becomes difficult to distinguish the effects of syphilis, dissipation, exposure to cold, bad food, and the mischief of an ill-directed course of mercury, as all these influences may be brought to bear upon the mechanic or prostitute unlucky enough to contract syphilis, and it remains for the surgeon to weigh the consequences, and choose the lesser evil; but among the upper classes I have no hesitation in recommending the surgeon to treat indurated chancre, and not wait until secondary symptoms appear. If my advice be followed, the patient is told the true meaning of indu-

ration; and if he is at all a nervous person, he will not like to run the risk of becoming the subject of secondary symptoms at any moment; he will call upon you to give mercury, and blame you if you do not. Should secondary symptoms occur, his friends will say, 'Had you given mercury, these symptoms would have been prevented.' It will then be too late to explain, as the patient will probably have already consulted some other medical man; others will have the credit of curing the patient, and the surgeon will regret not having given mercury."

During my late visit to Paris, my inquiries were directed particularly to this important question of giving or withholding mercury in indurated chancre. I found that the experience of the last ten years had only more fully convinced M. Ricord that mercury is necessary in all these cases, and to it he has recourse in all instances of true indurated chancres.

MERCURY.—When the diagnosis has been satisfactorily made out, and the remedy decided upon, the next point to be considered is, the form of mercury the surgeon should employ. In a late lecture,* M. Ricord considers that the pure mineral is more soluble than all the preparations of mercury; and he says that the lactic acid of the stomach, coming in contact with the metal, forms a bilactate of mercury, a preparation easily soluble.

Dr. Bærensprung believes that the protoxyde of mercury is the only preparation that is soluble, either when taken into the stomach, or when mercury is employed in friction. "But," says this author, "even the oxyde can not be taken into the body without the aid of a solvent; and this solvent is, in all probability, the free acid of the cutaneous secretion. Both the perspiration and the fatty secretion of the sebaceous follicles exhibit an acid reaction; and, according to Anselmino, the perspiration contains a considerable amount of free acetic acid. The acetic acid dissolves the oxyde, and this solution readily transudes through animal membranes and the cells of the epidermis." Hence he recommends that mercurial ointment be made with two grains of the black oxyde of mercury to two drams of fatty matter.—(See an interesting paper on the action of mercury in the "Chemical Gazette," 1850, page 324.)

In my own practice,† I employ the mildest preparations, and, among others, mercury with chalk. It has the following advantages over other preparations: it is seldom impure; the mercury is in the best state of subdivision, is not liable to produce colic, has no tendency to purge, does not hastily induce ptyalism, and being of sufficient bulk, a little more or a little less taken at a time is of no great importance, as it is when we employ a preparation to be divided into a sixteenth or a twelfth of a grain: the only precautions to be taken previous to a course of mercury consist in removing diarrhoea or costiveness. I do not find it necessary to alter the diet, unless it be to prohibit acids, fruits, or anything liable to disagree with the bowels. The patient is not required to keep the house: mercury undoubtedly acts better when the patient is confined in an equal temperature, but private patients will not bear confinement, nor absent themselves generally from business.‡ The dose of mercury with chalk is four

* *Gazette des Hopitaux*, August 30, 1845.

† There is great difference of opinion among surgeons upon the relative value of mercurial preparations. Thus Brodie recommends frictions with mercurial ointments. His language, at page 676 of "The Lancet," vol. i., 1843-'44, is very energetic: "Nay, I will go as far as to say that, except in the very slightest cases, you really can not depend upon any mercurial treatment effecting a certain cure, or even giving a good chance of it, by any other means than inunction."

Lawrence prefers blue-pill; Ricord employs the proto-ioduret of mercury: Carmichael did the same—proving that the preparation employed is not so important as regulating the dose, and attending to the indications. In the first edition of this work, I recommended the proto-ioduret of mercury, but I have found it so frequently produce colic, although I obtained a supply from M. Ricord, that I have nearly excluded it from my private practice.

‡ Surgeons are far from unanimous on the necessity for keeping the house during a course of mercury. Brodie states, page 676 *loc. cit.*: "I should say that, if a patient be confined to the house, or only allowed to go out a little once or twice a day, and if he be made to rub in mercury, and continues

or five grains; it had better be taken at night, four hours after meals, as the stomach is then empty, and the remedy more easily absorbed. In four or five days' time the dose should be repeated every other morning, and subsequently every night and morning. In spite of all our precautions, diarrhoea sometimes sets in, and the mineral will not be tolerated. This arises from the difficulty some patients have in regulating their food, or avoiding such articles as are incompatible with mercury taken internally. In practice we can often trace this disorder of the bowels to such slight causes as a waxy potato, or a glass of porter, which in warm weather is a little hard; and, arising from a trifling cause like this, we find astringents or opium in many cases inefficacious, and the complaint only ceases when we leave off giving the mineral internally. In private practice, I generally now abstain altogether from prescribing mercury internally, if my patient tells me his bowels are easily disturbed; for if this happens when no medicine is taken, you may infer that he can not take the requisite quantity without diarrhoea supervening, even if he avoid indigestible food, or substances containing acids. This is more especially found necessary in London, among our patients, so many of whom labor under the hundred-and-one forms of indigestion. In all such cases I at once have recourse to frictions; and a pretty large experience has convinced me that no plan is equally safe, simple, or efficacious, when a patient will submit to rubbing in. The only objection that can be urged against it in the present day is its uncleanliness, and this may be almost entirely obviated by the precautions in using it, to which I am about to allude.

In the first place, care should be taken that the mercurial ointment be not rancid, otherwise eczema will be a necessary consequence: I prefer using the strong mercurial ointment of the Pharmacopœia in its pure state. This must be procured from some undoubted source, as I believe it is not unfrequently adulterated with the most inert substances. Considerable difference of opinion exists on the state of the mineral in this preparation. I must refer those curious on the subject to several articles in the "Pharmaceutical Journal," by Jacob Bell, who has collected all the various opinions on this subject in several interesting communications; but the practical surgeon will be satisfied in obtaining the unadulterated article, and be more anxious to learn the indications for its use, and the precautions to be employed, than curious to hear if the theorist considers the mercury to be in a state of suspension or oxydation. The most experienced surgeons of the present day admit that mercury becomes more efficacious in proportion as it is presented in the simplest state to be absorbed into the system, there to undergo changes; but no two are agreed upon its *modus operandi* in removing the disease.

Mercurial Inunction.—The plan I pursue, in employing friction, is the following: I desire the patient to smear a quantity of ointment, equal to the size it for some time after the symptoms have subsided, the case being carefully watched, you will, in most instances, make a real and permanent cure."

Carmichael recommends confinement in the following words, page 157 of his "Clinical Lectures": "Another point to which I beg to call your attention is, the necessity of confining your patient to the house during a mercurial course (except the weather happens to be particularly mild); and so strongly am I convinced of the propriety of this advice, that where this injunction can not be complied with, I deem it better, even though mercury be strongly indicated, to dispense with it altogether, and have recourse to other measures, than to exhibit it while the patient is exposed to our cold and variable climate."

Lawrence thus gives his opinion, at page 728 of "The Lancet," vol. i, 1829-'30: "In the first place, we find that the effect of mercury is increased by warmth, and by keeping the individual in a regulated temperature. Hence it used to be considered a rule that the patient should remain in a warm room, that he should not go out and expose himself to the air while he was going through a course of mercury. There is thus far a reason for this, that free exposure to the cold air lessens the effect of the mercury. If you wish, then, to produce the effect of mercury readily, and to its highest extent, you should keep the patient in a regulated temperature, and with warm clothing. We do not desire strictly to confine the patient to his chamber during the entire course—that is not necessary; but it is a matter of expediency not to allow him to go out; keep him warmly clothed, and, under certain circumstances, confined to his own room, but this confinement is not to be considered as a general rule."

of a horsebean, on the inside of each calf of the leg or knee, every night on going to bed—not rubbing it in, as some have recommended, but merely passing the hand from above downward, by this means avoiding rubbing the hair in the wrong direction, and thereby producing irritation of the bulbs and subsequent tenderness. If this is pursued for a few minutes, the ointment will not be easily detached from the skin when the clothes come in contact with it, and absorption will take place quite readily enough. To prevent the sheets becoming black, it will be only necessary to sleep in old drawers, if the patient usually wears them, or a pair of linen trousers, which may be destroyed when saturated with ointment. Every third or fourth evening the patient should take a warm bath, to remove the stale ointment that may be on the surface of the skin, and absorption of fresh ointment will thus be expedited, and the occurrence of eruptions prevented. I recommend the application of the ointment on the inside of the leg and knee as being preferable to the inside of the thigh, for several reasons. In this latter situation, some of it is certain to be applied by the friction of the trousers to the fold between the thigh and scrotum; the heat and friction, together with the natural secretion of these parts, will soon cause the ointment to become rancid, and eczema, of a most severe form, is constantly occurring, which only declines as we leave off the application. It is difficult in these situations, likewise, to keep the linen from becoming smeared with the ointment, which, in private practice, is of the greatest importance, as washer-women are very curious people, and proverbially gossips. If, on the contrary, the ointment be applied to the calves, neither the linen nor the bedclothes will be the least soiled, and it often happens that patients rub in without any of their family being aware of their using this usually dirty remedy.*

* Pearson, who, we are told by Sir B. Brodie, was more successful in the treatment of syphilis than those who have succeeded him, states: "Half a dram of strong mercurial ointment may be used every night, or one dram every other night, as the case may be. If a sufficient effect is not thus obtained in sixteen days, one dram may be employed every night, and gradually increased to a dram and a half or two drams, or even more, if the proper effect be not obtained. No advantage can be expected from the use of more than half an ounce at a time."

"While under a mercurial course, the patient should wear more clothing, and avoid exposure to cold or moisture. The former, with heat, will increase the determination to the mouth, and the latter will weaken the effects of mercury, and render it uncertain, and often check them when produced. When a person undergoes a mercurial course for secondary symptoms, he should be confined to his room, if not to his bed, and, though not absolutely necessary, it is advisable even in summer. The room should not be small, or too much heated, and the patient should not lie much on a sofa or in bed, or sit near the fire, as the cheeks will thus be more or less affected. A little animal food may be allowed, with a small quantity of porter or wine. All acids must be abstained from, and even tea, if it becomes acid on the stomach. No vegetables, except potatoes, should be eaten. The bowels should be kept regular by castor-oil, or ext. col. comp., so that the patient may have a stool every day, or every other day at farthest. Let us consider—

"1st. *The Quantity necessary.*—For primary symptoms it will be necessary, when these have not existed long, to use not less than two drams of calomel internally, or three drams of mercury in the simple pill, or from an ounce and a half to two ounces of mercury internally, not including the substances with which it is combined. When secondary symptoms are present, from two to three ounces of mercury externally should be used, and, when the disease has attacked the bones and membranes, from three to four ounces—*seldom less than four ounces.* [I need not remind my readers that this was John Pearson's treatment. Iodide of potassium was not then known.] W. ACTON.]

"2d. *The Time necessary for the Cure.*—A course of mercury occupying five or six weeks is necessary in recent cases—not less than five, and frequently six; but we are not to be guided by the quantity of mercury, or the time taken up in employing it, but rather to the effects produced. The mercury must be continued some time after the symptoms have disappeared. In some cases it has been necessary to continue it seven or eight weeks; in secondary symptoms, seven to nine weeks will be necessary, and in the last stage, when the membranes and bones are affected, from nine to twelve. In such cases the mercury should be gradually introduced, that its effects may rise progressively in the constitution—never allow it to fall. When the patient spits a little, and his gums are slightly ulcerated, the quantity should be gradually increased, that the mercury may gain dominion over the constitution. If after this effect you suffer the mouth to become well, the cure will be uncertain. On the other hand, if the remedy be not gradually introduced at first, the patient will be soon obliged to stop, and will probably experience great inconvenience during the whole course. Salivation is of no use, except as a test of the effect of mercury, and therefore becomes desirable; and spitting to the extent of half a pint to a pint daily, with slight tenderness of the gums, will be sufficient."

When diarrhoea and dysentery come on during a course of mercury, Pearson recommends leaving off the mineral, giving a purgative, followed by opiates.—*Manuscript Notes of Pearson's Lectures, in the possession of Dr. Tweedie.*

Generally a fortnight elapses before the surgeon can perceive any perceptible taint of the breath or soreness of the gums—I say the surgeon, for long before this a patient will complain of all the symptoms he has been told attend salivation: he feels convinced that he has the coppery taste; from moving about his tongue, and sucking his gums, he declares they bleed, and the surgeon even may be misled by the fetid breath, if he has not previously examined the mouth, to detect decayed teeth or spongy gums, depending upon a collection of tartar. I have seen mercury left off much too soon, because slight salivation is supposed to have been produced; and as only slight salivation is recommended by modern surgeons, the object is supposed to have been attained, when in truth no specific effect has been produced. The real effects of mercury are the following: During the first few days a patient is unaware of taking medicine, unless the weather be bad, when he may complain of lowness of spirits. We not unfrequently find the flow of urine considerably increased, perspiration abundant, and the bowels often confined. The gums and cheeks first show the influence of the mineral by whitish patches; the gums, in contact with the teeth, become red and swollen; a patient complains of feeling his teeth and the interstices between them, and they bleed when he uses his toothbrush. There is now slight foetor of the breath, and a slightly increased flow of saliva, and the weight of the body diminishes from the loss of flesh which the patient rapidly sustains. The mineral should be continued until one or more of these effects are produced.* I believe, in the present day, practitioners commit a great fault in suspending the use of mercury too quickly: so much has been written on the dangers of salivation, that we do not now even obtain the judicious effects of the preparation. We stop short of these: hence the number of relapses; and the surgeon lives in the fond hope that enough mercury has been given, until disappointed by the return of the complaint.

There are a few patients who appear to resist the effect of mercury, just as there are some who are influenced by a few grains; the former may generally be salivated, when confined to a warm room, and not allowed to expose themselves to the air. Women, for these reasons, require less mercury than men, and infants at the breast are placed in the most favorable circumstances for the beneficial influence of the mineral. If a patient will not confine himself to the house, at least he should clothe himself in flannel, avoid wet or cold feet, exposure to draughts, &c. Turning now to the effect of mercury on the system, it varies greatly. Some patients are not aware of any effect whatever; others, from the first dose, begin to feel lassitude and a general uneasiness; their appetite fail them; the tongue is moist and white, though not furred; there is some fever and heat of skin; this goes off in a few days, and the patient bears the remedy well during the remainder of the time. I generally recommend a glass or two of wine to patients who feel this uneasiness, or weak brandy and water; or brandy and soda-water seems to put the stomach in better humor than anything else. If, on the contrary, the patient habitually indulges in wine or spirits, his rations must not be cut off suddenly, but gradu-

* Nearly all authors are unanimous upon the effect we must produce on the gums, however much they may differ on other points. Brodie says: "With reference to the effect of mercury on the system generally, I believe it is always better that the gums should be made a little sore, and that there should be some degree of salivation. You can not depend upon it, when employed in syphilis, unless these effects are produced."—*Clinical Lectures in The Lancet*. vol. i, 1843-'44, p. 677.

Lawrence states it as his opinion, "that the effect which is thus produced upon the mouth is considered a criterion of the general influence upon the system of the remedy on which we place our reliance for arresting and curing syphilis, and I believe it may be safely regarded in that light. Often, so long as no alteration is produced on the state of the mouth, we do not find the curative effect take place, and we generally find the curative influence proceed in proportion to the local effect observed in the mouth; we can not, however, say that this is true in all cases."—*Lawrence's Lectures in The Lancet*, vol. i, 1829-'30, p. 728.

ally diminished to a more moderate quantity. I have never found any advantage follow, from keeping persons on low diet who are taking mercury.

As a general rule, the mineral should be given as long as any hardening remains around or beneath the sore, and this must vary from a fortnight to three months or more. Sir B. Brodie says: "If it [mercury] be taken for a primary sore, the patient should never leave it off until the hard cicatrix has disappeared. You must exhibit it until the sore has healed, and for some time afterward."—*The Lancet*, vol. i., 1843-'44, p. 676.

During my late visit to M. Ricord's hospital, I asked the French professor, "How long must mercury be given after the disappearance of induration?" He acknowledged that six months at least may pass before leaving off the preparation, which he thinks ought to be kept up to nearly the same dose which has effected the cure, for that prolonged time; "and even then," adds he, "the patient must not be surprised at seeing the disease return."

General rules, however, in this department of surgery, admit of a large number of exceptions, as I have frequently had occasion to mention, a few of which I may here allude to. When I commenced private practice, it was my determination to give very little mercury, and continue it for very short periods; but in carrying these my intentions into effect, I found the evil was as great in giving too little, as too much, of the mineral, and in spite of my early convictions, I now give mercury, not only in cases which formerly I thought required it, but continue it for periods longer than I did some three or four years ago. I should, however, be sorry to carry it to the extent some recommend; such treatment would be attended with the worst consequences; and even given with the greatest precautions, and in the most urgent cases, I am often obliged to leave it off, at the moment I am aware it ought to be continued for longer periods. I will here cite a case which has lately come under my notice, to show the practical difficulty surrounding this part of my subject. A gentleman contracted indurated chancre; frictions were employed; every precaution was taken by the patient and myself, but he did not and could not keep the house. The frictions failed in dispersing the induration although continued for six weeks; the powers of my patient began to fail; the bowels became irritable; the digestion got out of order; the spirits low; the pulse feeble, and press of business prevented him from leaving town. I was compelled to leave off mercury, and yet I felt convinced that secondary symptoms would return. My patient at length left town, and his health recovered immediately; but with it an abundant crop of secondary symptoms appeared on the scalp. Under the circumstances, mercury internally was given, which, at first, the patient bore well, the symptoms rapidly disappearing; but diarrhoea coming on, partly owing to the mercury, and in part due to copaiba he was taking, the mineral was obliged to be left off; he came to town, and finding himself again with a relapse, had his confidence shaken in my treatment, and consulted a young surgeon, who told him that iodine was the remedy, and recommended it to be tried again (for the patient had before taken it). The symptoms, however, in spite of iodine, increased, and this gentleman again consulted me, and moderate doses of mercury, which he bore well, as he had recruited his powers in the country, cured him, although he took it for an insufficient time. This forms a sample of the cases we meet with occasionally in private practice, and shows the difficulty of treating cases by any rule a surgeon may lay down. It sometimes happens that our colleagues are not very charitable in the construction they put upon treatment, and my patient was told that mercury ought to have been given at the commencement of the chancre, and if it had been, these symptoms would not have relapsed.

I have remarked, and I do not remember to have read or heard of the observation elsewhere, that when induration occurs in a person who has already

had secondary symptoms, but little mercury is requisite to cure the induration ; whereas, had secondary symptoms not preceded, probably larger quantities would have been required. The first instance which directed my attention to the subject was the following :—In the summer of 1845, a gentleman contracted chancre, which became indurated, raised, and the centre took on a gangrenous action. A simple plan of treatment was followed at first, but at length mercury was resorted to, when what was my surprise to see the symptoms totally and rapidly disappear. Having learned that this patient had suffered some years before from secondary symptoms, I left off mercury a few days after the entire disappearance of the induration, and my patient has had no relapse since.

In carrying out the general rule, that mercury should be given as long as induration lasts, the surgeon must not forget, that in old-standing cases, the mass may consist of something more than specific induration, and may be made up of organized tissue, which it is in vain to think of removing by mercury, as is so ably stated by M. Ricord and Wallace.* I have myself seen persons bearing traces of induration for two years after a course of mercury has been left off, and yet no secondary symptoms follow ; but in these instances it has been impossible, from the situation of the hardened mass, to apply compression. I now generally find these "remains" less common than formerly : the surgeon, however, must be prepared to leave them occasionally, particularly when he thinks he has given mercury enough, or the constitution of his patient will not allow him to carry it further.

SALIVATION.—At page 293, we mentioned slight salivation as a common and beneficial effect of mercury, particularly when confined to slight swelling of the gums ; in some few cases, however, it is not possible to confine the effects of mercury within these moderate bounds, and this brings us to make a few observations on salivation.

Salivation is a rare occurrence previous to teething, as mercury up to this period acts rather on the digestive organs, or on the skin. It occurs readily in females, in persons of lymphatic temperaments, in scrofulous habits, and especially in persons predisposed to scurvy ; in fact, we observe it in all those who appear to possess blood deficient in plasticity. Habitual constipation and decayed teeth especially predispose to it. Soluble preparations of mercury excite salivation more easily than those which are insoluble.

Salivation usually occurs during the first week of the administration of the mineral, and may follow twenty-four hours after the first dose, more commonly after the fifth day. It is liable to occur after every augmentation of the dose ; but when salivation does not occur at the commencement of the treatment, it has little tendency to set in at a later period.

The augmentation in the quantity of saliva is the first symptom which strikes the observer ; the mucous membrane becomes partially or generally swollen, and is affected with inflammation, partaking of the œdematosus and erysipelatous characters. The patient perceives a feeling of heat and redness, as well as a coppery taste in the mouth ; the teeth are raised in the gums, moveable, and seem to the patient to be separated by some foreign body ; he believes that they are longer than usual ; the tongue swells, and this sometimes occurs to so great an extent that it is incapable of being contained in the mouth, and may receive indentations from the teeth. The gums and lips likewise swell,

* "When this specific induration has been destroyed, there remains sometimes *du tissu inodulaire*, des *tissus de cicatrice*, des *nodules de tissu fibro-cartilagineuse*, which may impose upon us as the remains of induration. Mistrust generally an induration which resists, during six or eight months, a well-regulated mercurial treatment."—*Ricord, Gazette des Hopitaux*.

"It is, however, to be observed, that it will not be always in our power to disperse indurations of this kind ; for it sometimes happens that a state of hardness and tightening will continue long after the period at which mercury ought to be omitted. Indeed, a state of induration and contraction of the parts which had been the seat of primary syphilis may persist even for life."—*Wallace, loc. cit.*, page 312.

and the mucous membrane may become tumesced in the interval between the lower and upper jaw. In proportion as these symptoms are aggravated, so is the saliva found to be viscous and abundant, and to have what is called a mercurial smell,* a sort of metallic odor, that may be perceived to some extent in other inflammations of the mouth, but which in these cases is very well marked, and which may be found previous to the occurrence of ptyalism.

The Treatment of Salivation ought, in the first place, to be prophylactic. Our primary object should be to remove the cause which has given rise to it, if that be in our power. Diminish the doses of mercury, or give them at longer intervals, or suspend the employment of the mineral altogether. As preventive means we should mention keeping the mouth clean, the use of astringent gargles, and the employment of aperient medicines. Such means, if they do not altogether prevent, will at least diminish, the effects of the disease. Chlorate of potash, in one-dram doses, has been said to be an excellent remedy in salivation; cases so rarely occur, that I have had no personal experience on the treatment.

Sulphur has been supposed to be an excellent remedy against salivation, when given in milk or honey, in half-dram doses. Sir W. Burnett, on the other hand, says, in his account of the effect of mercurial vapor on the crew of the *Triumph*: "I shall therefore only briefly state, that sulphur given in large quantities internally produced no alleviation of the symptoms; on the contrary, it greatly augmented the bowel complaints with which many of the men were affected, and brought on most severe tenesmus, consequently it was laid aside; applied externally it was of no use."—*Johnson's Review*, vol. iv., p. 1014.

As a local remedy, and one that never fails us, the surgeon should employ strong muriatic acid. Let the affected parts be touched daily with the acid, by means of a little piece of lint wrapped around a probe, care being taken that the acid does not come in contact with the teeth. When no ulceration is present, little pain will be felt, but when such exists, the pain will be severe, but momentary, and the ulcerated surfaces will bleed on each application; the mouth should always be washed out after the use of this remedy, and the benefit which follows will become in a short time apparent; the patients, instead of dreading, will claim a repetition of the treatment. When no ulcerations exist, an astringent gargle may be prescribed; in other cases, one that is only slightly acid. Lemonade is the most agreeable drink. Circumstances may arise in which aperients, leeches to the base of the jaw, and bleeding from the arm, may be requisite, and the food should be in proportion to the patient's strength.

ERETHISMUS MERCURIALIS, was formerly not an uncommon disease, and says Pearson, is one which is characterized by great depression of strength; a sense of anxiety about the *præcordia*; irregular action of the heart; frequent sighing; trembling, partial or universal; a small, quick, and sometimes intermittent pulse; occasional vomiting; a pale, contracted countenance; and a sense of coldness; but the tongue is seldom furred, nor are the vital or natural functions much disordered. When these, or the greater part of these symptoms are present, a sudden and violent exertion of the animal power will sometimes prove fatal; for instance, walking hastily across the ward, rising up suddenly in the bed to take food or drink, or slightly struggling with some of their fellow-patients, are among the circumstances which have commonly preceded the sudden death of those afflicted with the mercurial erythsismus.†

I need not say that these results are no longer witnessed, but we still every now and then meet with effects of syphilis and mercury, which deserve the attention of surgeons. M. Ricord has called this state of system—

* In the twelfth number of the *Expérience* for 1837, will be found some curious investigations of M. Gmelin, which prove that mercury is present in the saliva. Ricord states, he has repeated these experiments without success.

† Pearson on *Lues Venerea*, p. 154, second edition.

SYPHILITIC CHLOROSIS: he has lately found that in the syphilitic diathesis there is an invariable alteration of the blood, and this consists in diminution of the number of the red globules in various proportions, amounting, in some cases, to the same extent as in anaemia; there is the same depression of the circulation, and the dull eye and dirty complexion show that the blood no longer possesses its healthy properties; and we are told by Dr. M'Carthy that we have the same morbid sound accompanying the first sound of the heart, heard in the carotids in anaemia.*

If, then, these symptoms result from the syphilitic diathesis, can we be surprised at Pearson having met with them in an aggravated form, when he gave mercury so largely—a mineral which we know, from the experiments of Magendie, has the power of depriving the blood of a large portion of its fibrine. These are consequences which should be always borne in mind in the present day: it is in these cases that we see the worst forms of complicated syphilis, and which require only common attention to detect, in time to obviate the worst consequences. I have, in the course of my description of the effects of mercury, alluded to the occurrence of slight cases, and, with care, serious consequences are not to be dreaded: need I here say, that when they make their appearance our attention should be called to the treatment which I proceed to describe? Pearson recommended all mercurial preparations to be left off, whatever may be the stage, or extent, or violence of the venereal symptoms. "The impending destruction of the patient," says he, "forms an argument paramount to all others; it may not be, indeed, superfluous to add, that a perseverance in the mercurial course under these circumstances will seldom restrain the progress of the disease, or be productive of any advantage. The patient must be expressly directed to expose himself freely to a dry cool air, in such a manner as shall be attended with the least fatigue. It will not alone be sufficient to sit in a room with the windows open; he must be taken into a garden, or a field, and live as much as possible in the open air until the forementioned symptoms be considerably abated." I should not have here alluded at length to the treatment of John Pearson, did I not frequently witness syphilis and mercury producing, not the exaggerated consequences, it is true, here spoken of, but some minor effects, the treatment of which is conducted on the same principles as recommended by the late surgeon to the Lock, and which is totally opposed to all pathological views. As soon as any symptoms of anaemia arise, many modern practitioners leave off mercury; but what is the result? The disease goes on unchecked in the constitution, and the chlorotic state increases. If the patient is exposed, as above directed, he gets an inflammatory sore throat, and then comes the puzzling question, what is to be done? At this stage it is difficult to decide; but to correct the error, we must retrace our steps—we must study the pages of writers like Ricord, who have investigated the natural history of syphilis. We then find that anaemia is the result of syphilis, not altogether of mercury, as Pearson believed. If this is once allowed, then we must treat the anaemia, and it is not absolutely necessary to leave off mercury, which checks the disease. In my own practice, when I find anaemia coming on, I give iron, combined with mercury: the result is at once often apparent; the iron acts in improving the general health, and the mercury acts equally well in curing the syphilitic diathesis. If, however, I am called to see a patient who is salivated, and in a chlorotic state, I recommend mercury to be left off: here Pearson's directions are quite available; but the surgeon should hesitate in leaving off mercury, when the symptoms under which a patient is laboring may depend upon chlorosis, brought about by the syphilitic diathesis; it is in these cases that modern improvements in the treatment of syphilis consist, and demand the

* *Bulletin Thérapeutique*, translated in Cormack's Journal, vol. v., p. 239, and Thesis, by Dr. M'Carthy. Paris, 1844.

attention of surgeons; they further prove, that one complaint can not be properly treated by a practitioner inattentive to the other affections which may complicate the specific affection.

Of all the preparations of iron, I prefer the tincture of the sesqui-chloride, given in doses of twenty or thirty drops, two or three times a day, in the infusion of quassia; under it the system rallies, the hectic flush disappears, the color returns to the cheeks, and the patient resumes his usual appearance, when he may again resume mercury, or not, as the indications for its use may or may not be present.* Together with this, the diet should be generous: change of scene is frequently advisable, and great good is often derived from being much in the open air, and enjoying regular exercise. I believe much more benefit may be expected from this treatment than the old story of a course of sarsaparilla, acids, and more recently, iodide of potassium. There are still a large number of patients who think you have not done them justice if you do not prescribe a long and expensive course of sarsaparilla; it is in vain to argue with them, and it is often necessary to lend oneself to these harmless prejudices; but I must agree with my master, M. Ricord, that sarsaparilla has usurped a reputation which it by no means merits, and, judging from its history, I should say, it gained its character by the older surgeons leaving off mercury when they began to give sarsaparilla; it formed an excuse for letting the constitution lay fallow for a time, and this inert substance allowed the system to rally after mercury had been largely given. Certainly, in the present day, it is fast falling into disrepute, and perhaps nothing has hastened its downfall so much as the introduction of iodide of potassium.

I have (in treating of fictions) alluded to *eczema mercuriale*, another bugbear of the older writers; I have spoken of its causes and the means of prevention. It would appear, by the account in Pearson's work, to have been formerly much more common than at the present day.

If mercury be given in the manner here recommended, and if its ill effects be guarded against, the mineral will, I think, regain its former high position as a cure for syphilis. It is to be hoped it will never again be recommended so indiscriminately, nor employed in such large doses, as formerly.† What can prove more highly the estimation in which it is now held by its former opponents, than the avowal that they are unable to cure their patients without employing mercurial preparations, and this after abortive attempts, during many years, to find substitutes for a mineral they formerly refused to employ in any case, or in any quantity? No remedy, I may safely say, has gone through such an ordeal, or passed an examination more victoriously. Let us hope that its abuse has passed, and that all will turn their attention to its *use* in the cure of a disease which is becoming better understood.

After having concluded a course of mercury (which, let me repeat, should not be left off until all traces of induration have ceased), the surgeon must turn his attention to the general state of the constitution, which is usually somewhat impaired by the quantity of mercury necessary for the cure. To effect the restoration of the health, recourse should be had to the vegetable bitters, and I

* Surgeons who are in the habit of giving the preparations of iron to patients will find that the mineral not unfrequently causes the reproduction of the spots which the mercury has caused to disappear for the instant. In cases where the diathesis exists, this must not surprise the surgeon, or deter him from giving iron when he thinks it necessary for the general health of the patient. The fact, it appears, was known to Swediaur.

† Caries of bone and exfoliation have been successively said to depend upon mercury and syphilis. Sir W. Burnett, in his account of the effects of mercurial vapor on the crew of the 'Triumph,' says, that "In the case of a woman who was confined to bed in the cockpit with a fractured limb, not only were all the teeth lost, but many exfoliations also took place from the upper and lower jaws."—*Med. Chirurg. Review*, vol. iv., p. 1012.

That mercury will produce this effect on animals is shown by the same author, and I recollect a cat which was kept in the store room of the Venereal hospital of Paris, that died of disease of the bones of the head, produced by the effects of being constantly in contact with mercurial preparations.

know none more useful than the infusion of quassia, which I prescribe in the following manner :—

R. Ras. Quassie.....	3ij.
M. ft. chart. pro. infus.	

I desire the patient to pour a pint of boiling water on this quantity of quassia, allow the infusion to become cold, and then take it the next day in quantities of a small tumblerful before each of his meals. I often combine it with iron or I give quinine. This tonic plan has now almost entirely superseded sarsaparilla and its adjuncts, and will be found far more efficacious than these much-vaunted remedies.

SECTION VIII.

URETHRAL CHANCRE.

IT is only within the last few years that the attention of the profession has been called to this form of chancre—one which explains some of the most important principles of venereal diseases, and therefore deserves our consideration under a separate section. The existence of true urethral chancre is now placed beyond a doubt, and English surgeons admit that specific ulcers may exist in the urethra as well as in other parts of the body, and that they may give rise to secondary symptoms. My readers will moreover now understand that a discharge from the urethra may become complicated with chancre in the urethra, and that what a few years ago was thought to be only a common case of gonorrhœa, may depend upon chancre in the urethra, accompanied with a purulent discharge; hence the occasional occurrence of secondary symptoms following discharges from the urethra; a circumstance that puzzled for a long time the practical surgeon, and induces some few still to believe that gonorrhœa occasionally produces secondary symptoms; a dogma that I have attempted to overturn in treating on that subject.

It is somewhat surprising that previous to M. Ricord's investigations, urethral chancre should have obtained so little notice. No surgeon in the present day need look far without discovering numerous cases of simple sores on the glans penis at the margin of the meatus, which extend more or less into the canal, in no respect differing from chancre as described at page 236, except that the urine has a tendency to irritate the little sore, and prevent its healing.



Chancres in the Urethra.

It is not uncommon to meet with other cases where chancre in the urethra is only brought into view when the lips are held apart by the fingers; we then see the concealed chancre brought before us as clearly as if it were on the glans penis. Analogy would lead us to expect that chancres might exist in the urethra a sufficient distance from the meatus, to prevent us seeing them, they

would then give no other symptom of their existence, than the discharge they give rise to or the tenderness felt on external pressure. Inoculation of the secretion or post-mortem examination of persons who have fallen victims to this complaint, fully bear out the analogy, and the annexed woodcut, taken from a drawing in M. Ricord's "Iconographie," shows the existence of such chancre. Having so fully discussed the course and termination of simple chancre and its varieties, I shall pass over this subject, and at once speak of the

DIAGNOSIS OF URETHRAL CHANCRE.—Provided a sore can be brought into view, an absolute diagnosis may at once be made by inoculating with the secretion, and if it succeeds, no doubt can exist that we have to treat a chancre and not common ulceration. If the reader will, however, turn to page 242, he will find, that, provided a surgeon be consulted when the chancre has already healed, or its specific characters are lost, inoculation will afford us no means of judging of the existence of an ulcer. To produce the specific pustule on inoculation, the sore must be in a progressive state, otherwise the diagnosis will be most uncertain ; it is from ignorance of these laws (fully detailed in the early part of this chapter) that mistakes occur.

In practice, however, the surgeon is not always master of his position ; the patient may not apply early, a chancre may not be visible ; the patient may not be willing to submit to inoculation, or he may be suffering from severe discharge from the urethra ; there may be phymosis, or some other complication ; and yet it is of great importance that the surgeon ascertain whether the patient labor under urethral chancre ; let us see how far experience assists us.

In the cases of simple urethral chancre which have fallen under my notice, the patient usually states that the discharge from the urethra has not commenced until many days after connection. A very intelligent American gentleman, now under my care and who was sent by Dr. Ollife, of Paris, states that a month elapsed from the time he last had connection and the appearance of the discharge which Dr. Ollife at once characterized as urethral chancre, and for which he was under treatment. If this were an isolated case, it might be supposed an exception, but in the former edition of this work I drew public attention to the same fact, and subsequent experience induces me to believe that the appearance of urethral chancre may be delayed some considerable time ; probably the virus is pressed into one of the lacunæ, so numerous in the neighborhood of the meatus, and some time elapses before the lining membrane is corroded, and the virus comes in contact with the cellular tissue ; such an opinion is quite in accordance with the laws of syphilis, stated at page 245. Be the explanation what it may, certain it is that many patients repeat the same story, and thus the history may be made available in the diagnosis.

I here insert a case exemplifying strongly this part of pathology, which has hitherto received but little attention from English surgeons, and which often gives rise to the greatest difference of opinion.

Indurated Urethral Chancre with Secondary Symptoms. Sept. 29, 1847.—Mr. Weston desired me to meet him in consultation about a gentleman who was suffering from secondary symptoms, the result of gonorrhœa. The history of the case is the following : A. B., about twenty-seven years of age, contracted, five months since, when at Cambridge, what he believed to be gonorrhœa, namely, discharge from the urethra, slight scalding, &c. ; he took capsules, mixtures, &c., which did some good, but as rheumatism came on two months after, he took colchicum, and the case was treated as one of gonorrhœal rheumatism, by Mr. Fichlin, of Cambridge ; still the gonorrhœa continued, and A. B. went to Ramsgate for the benefit of his health ; there he came under the care of Mr. Curling, and for the first time (the patient says) a sore place broke out on the orifice of the urethra. Mr. Curling gave him small doses of mercury and sarsaparilla for about a month, and the excoriated surface healed ; and in a

letter to Mr. Weston, on his patient leaving Ramsgate, Mr. Curling says, he has a suspicion that there is a syphilitic taint lurking in the system, and recommends his mouth to be slightly affected. It was then after five months of treatment, that my opinion was asked on the nature of the case, and I found A. B. in the following condition : the body covered with patches of herpes or eczema, consisting of little circles of four or six vesicles, which had become dry, and having a somewhat annular appearance, nearly similar to those depicted in Plate X., bis., of M. Ricord's Plates ; the throat inflamed and red, deglutition painful, and somewhat like condylomata on the surface. On examining the penis, I found the orifice contracted, and the gristly induration most evident. I had no hesitation in considering this a case of indurated chancre of the urethra, which had existed five months (for my patient had not had connection since that period), followed by secondary symptoms of a most characteristic kind. Now, had this patient gonorrhœa in the commencement as well as a urethral chancre ? it was impossible to say at the period I was consulted ; but that the chancre had existed for five months is beyond doubts, although the induration had appeared only six weeks. This, doubtless, is the sort of case which has often been cited as one of gonorrhœa producing secondary symptoms, whereas the exact converse is the fact, viz., chancre producing discharge from the urethra, and subsequent secondary symptoms, although the chancre is not detected until many months after connection. How far this diagnosis might have been made at an early period of the disease, I am unable to say ; but I mention the case as a highly-instructive instance of the complaint, and one which may induce other surgeons to cope with these exceptional cases. It shows moreover the inutility of the ordinary treatment of discharge in urethral chancre.

Probably the rheumatism was not of a gonorrhœal character, but that which usually precedes syphilitic constitutional disease. Viewed in whatever light we please, the case is of a highly important character. The patient entirely recovered in a few weeks under five grains of hyd. c. creta every night, warm baths, and an astringent gargle to the throat.

The secretion in urethral chancre may at first be very slight, and I believe may almost pass without observation, unless the patient's attention is particularly called to the fact, and provided his habits are regular. At first the discharge is rather serous than purulent, seldom becoming muco-purulent, in this respect assisting our diagnosis ; it is often of a rusty color, at the same time small in quantity, and in the more serious cases contains detritus of the animal tissues.

The trifling discharge present, and length of time that a chancre in the urethra may last, is deserving of attention, inasmuch as it may explain the occurrence of primary sores in married women and hereditary disease in children, instances of which are continually published, and which authors are disposed to consider as proofs that secondary symptoms in the husband are communicated to the wife. This question will be further alluded to in speaking of syphilis in children, but let the reader recollect that in all such cases great doubt may be thrown upon these exceptional cases, unless minute attention has been paid to the urethra, to avoid a urethral chancre being overlooked, which might lead to the occurrence of great mischief.

The importance of the great distinction which it is necessary for the surgeon to show, has been lately impressed upon me by the following case : An old fellow-pupil of mine at St. Bartholomew's hospital, now established in a distant part of the country, treated a young man for some venereal affection and secondary symptoms. When he was nearly well, this patient asked the sanction of my friend to a marriage which he was about to contract. The penis was free from disease, as my friend believed, no sore being apparent, though a few blotches remained on the abdomen. On such authority the marriage was solemnized, and in a few months secondary symptoms broke out in both parties,

and presented the well-marked coppery blotches. On interrogating my friend, he assured me of the correctness of the statements of both parties, and their honorable conduct; but in conversation, he accidentally alluded to a stricture of a very obstinate nature which his patient had previous to marriage. The views of M. Ricord on the existence of chancres in the urethra were unknown to him, and he agreed with me in the possibility of such an occurrence, and no longer admitted that secondary symptoms were transmissible, which opinion this isolated case had induced him to believe.

Until induration commences, the diagnosis is not much assisted by pressing the canal, as pain will be felt in gonorrhœa as well as in chancre. If induration be felt, it need not be the result of specific induration, as abscess along the canal will simulate it, and chancre may exist in the urethra without any induration. Micturition gives us little assistance in diagnosis, as there may or may not be scalding in passing water. Although, then, some information may be gained from these different symptoms, the principal dependence must be placed upon inoculation, which should be tried in all cases where a surgeon has any doubt about the diagnosis of discharge from the urethra. Otherwise his treatment will be much blamed, and he may be accused of producing secondary symptoms, the natural result of chancre which has not been detected in the urethra.

In urethral chancre, inoculation often only corroborates our suspicions that the disease exists. In these cases we observe a remarkable appearance in the meatus, by which the lip corresponding to the side on which the sore is situated becomes swollen; frequently we meet with a cupped depression of the meatus, which presents a striking contrast with the swollen state of the glans. This is attended with a very slight rosy or brownish discharge, so as often to escape the attention of the patient. Lastly, on pressing the parts between the fingers from above downward, the whole of the mother-of-pearl induration is distinctly seen as well as felt.

The diagnosis may be further complicated by phymosis. I saw such a case during my late visit to Paris: a man presented himself with induration between the glans and prepuce, attended with phymosis, and it was impossible to diagnose more closely the case; but as there was hardness of the glands of the groin, M. Ricord considered it to be indurated chancre, and not dependent on vegetations, calculi, or encysted chancre.

PROGNOSIS.—The prognosis is usually favorable; so much so, I believe, that we cure a large number of urethral chancres without being cognizant of their existence, by means of the nitrate-of-silver injection now generally employed in the treatment of discharges of the urethra. When, however, induration comes on, the case is very different, and the prognosis will assume that importance which we alluded to when speaking of indurated chancre. Urethral chancre is, I believe, one among many causes of stricture. It is probable that many of the cicatrices described by Morgagni and others, in the urethra, are due to the previous existence of urethral chancre, which has caused diminution in the calibre of the canal in the neighborhood of the meatus. The prognosis is, however, not favorable when phagedæna attacks chancres in the urethra just within the meatus. I was lately called to treat a case of fistula in this situation, the consequence of urethral chancre. M. Ricord, however, states that he has known several instances of urethral chancres, which have formed an ulcerated opening close to the frænum, and yet no fistula has resulted, nor urine escaped.

The occurrence of phagedænic chancre in the deeper portions of the urethra is very uncommon. M. Ricord has met with two instances in which death followed a lingering illness; but such cases are very rare. In the instances in question every means to arrest the disease was tried without avail; and I would

refer those desirous of seeing the appearances, to M. Ricord's "Clinique Iconographique," Plate VIII., with the annexed description.

TREATMENT.—Little need be said on the subject of treatment. We should treat chancre of the urethra exactly on the principles spoken of in preceding pages. Cauterization and astringent washes should be employed. Much relief will be found by anointing the parts with oil before micturition, as the surface will be shielded from the irritating properties of the urine, and the lips of the meatus may be kept separated by lint. In all respects, our treatment of the complaint in the urethra is to be guided by the same principles as chancre elsewhere, and which have already been so fully discussed.

CHAPTER II.

BUBO.

DEFINITION.—By the term "bubo," I understand a circumscribed swelling of a lymphatic vessel, gland, or its surrounding cellular tissue.



Before commencing the description of the various kinds of buboes, it may not be uninteresting to recall to the recollection of my readers the present state of our knowledge on the

ANATOMY AND PHYSIOLOGY of the lymphatic vessels and glands, as it will enable us more clearly to understand the subject. Müller states (Physiology, vol. i., page 282) that "absorbents take their rise as a network, of which the meshes are sometimes oblong, sometimes more uniform [or equal-sided?—gleichförmig]. The meshes are sometimes smaller even than the diameter of the minute lymphatics which form them, so that the network is very close, while at the same time the vessels are very irregular in size; and this structure may, to the superficial observer, have the appearance of aggregated cells, which, however, are merely inequalities and slight dilatations of the vessels, forming a very close network. In other parts, where the meshes are larger, the reticulated structure is immediately evident. The diameter of the vessels varies very much, but they are never so minute as the capillary blood-vessels; and I am acquainted with no absorbent vessels which are not visible to the naked eye."

Thus commencing, the lymphatics of the penis (which more immediately



concern us) pursue their course to the inguinal glands, as described by Cruikshank :—

"The absorbents of the penis may be divided into a superficial and deep-seated set. The superficial absorbents arise from the prepuce in three divisions—one on the right side of the frenum, another on the left, and the third directly in the middle on the superior side. Those from the under side make a semicircular turn from the under to the upper side of the penis, while those on the superior part of the prepuce run on the middle of the dorsum penis, exactly in the direction of the symphysis pubis. At a little distance from the symphysis, the three divisions unite in one common trunk, which almost immediately again separates into two. One of these trunks goes to the right groin, accompanies those veins which go to the inguinal vein, and terminates near it in those inguinal glands which are nearest the symphysis pubis. The other trunk goes to the left groin, and terminates exactly in the same manner as the former. . . . The deep-seated absorbents accompany the arteries, and pass with them on the inside of the tuberosities of the ischia, or under the angle of the pubis."—*Cruikshank's Anatomy*, p. 152.

"In structure, the lymphatics are very like veins; having, according to Köllicker, an external coat of fibro-cellular tissue with elastic filaments; within this a thin layer of cellular tissue, with organic muscular fibres, which have principally a circular direction, and are much more abundant in the small than in the larger vessels; and again within this an inner elastic layer of longitudinal fibres, and a lining of epithelium, and numerous valves. The valves, constructed like those of veins, and with their free edges turned toward the heart, are usually arranged in pairs, and in the small vessels are so closely placed, that when the vessels are full, the valves constricting them, where their edges are attached, give them a peculiar beaded or knotted appearance. The glands placed on the lymphatic vessels consist essentially of plexuses of the vessels; but, together with the vessels, most of them contain corpuscles, by the action of which, after the plan of gland-cells, it is probable that the lymph is modified, and its elaboration assisted.

"Each gland has an investing capsule of cellular tissue, from which prolongations dip into its substance forming partitions. Into each gland two or three vessels enter, which are named *afferent vessels*; as they enter, their coats are thinned, their external coat separating and becoming continuous with the capsule of the gland (Goodsir, i., p. 44). Thus, having only their external coat and epithelium, they pass into the gland, and therein subdividing, running tortuously, variously dilated and anastomosing, they form a plexus. The vessels of the plexus converging and uniting, form two or more *efferent vessels*, which are rather larger than the *afferent* ones, and issuing from the glands, receive again their external coat, and proceed on their way toward the thoracic duct."—*Kirke's Physiology*, page 265.

Now the glands which interest us the most are the inguinal glands, to which the lymphatics of the penis converge; they are thus described by Cruikshank :—

"The inguinal glands are of an uncertain number, from eight, ten, or twelve, to twenty or more. They are situated principally above the fascia of the thigh, though several of them lie under it. These last are placed on the iliacus internus muscle, between the triceps and sartorius. Sometimes several of these glands are collected into one large one, which lies on the upper side of the inguinal artery. Those which are nearest the symphysis pubis belong to the absorbents of the parts of generation in both sexes, and become in the venereal disease the seat of buboes."—*Cruikshank's Anat.*, page 134.

Physiologists are not agreed on the subject of absorption by the lymphatics, notwithstanding the numerous experiments which have been made. Müller

says, page 280, vol. i., "I confess that the act of absorption in other parts, as well as in the intestines, is to me quite an enigma."

Some persons believe that absorbents have a power of selection, whereas the veins take up all substances indiscriminately; in the absence of certainty, however, we may state that, explain it as we will, it is now an undoubted fact that the syphilitic virus may be conveyed from the surface of an ulcer along the absorbents, or even into the next gland. This is now placed beyond doubt by the experiments on inoculation of M. Ricord, at page 143 of his treatise. He says:—

"A patient presented himself suffering under syphilitic bubo, attended with considerable suppuration. I opened the abscess, but after the pus had been evacuated from the cellular tissue, I found in the middle of the abscess a lymphatic gland of considerable volume, and presenting the feeling of fluctuation in the centre. I punctured it, and inoculated the patient with the pus which it contained, at the same time that I inoculated likewise with the pus taken from the surrounding parts: while the pus taken from the gland produced a characteristic pustule, that from the cellular tissue remained without any effect. I made, in consequence of this case, a series of experiments which no longer left any doubt on the results of inoculation."

Dupuytren had previously stated that he had observed pus in the lymphatics in the neighborhood of abscesses, but many, and Müller among others (page 277), believe that this pus was caused by inflammation of the walls of the absorbents themselves; that this may have been the case in Dupuytren's cases is possible, but inflammation could not have produced the inoculable virus in Ricord's cases, and thus we are led to believe that the virus must be taken up by the absorbents from ulcerated surfaces; whether the absorbents take it up when no lesions of the vessels occurs, is not the question which interests us at the present moment, nor can we stop to discuss the power by which the virus traverses the vessels—a subject on which great difference of opinion exists; it must suffice for the surgeon to know that the virus is carried into the first gland, where it forms an internal chancre, making its way to the surface by a destructive process of ulceration, which we shall presently describe, under the head of Inflammatory Bubo.

What internal changes occur in the indurated bubo (see pages 314 and 315), we are unable to say, though they probably are much the same as those noticed when treating of Indurated Chancre.

Did we judge of the probability of bubo by the abundance of lymphatic vessels, we should say, *a priori*, that bubo ought to be a very common occurrence, seeing the immense network of lymphatics with which the penis is supplied; practice, however, proves that notwithstanding these anatomical reasons for the frequent occurrence of bubo, it is rarely met with in proportion to the frequency of chancre. In private practice and in good constitutions a patient never ought to have bubo; when it happens, either the patient has neglected himself, or his constitution has a scrofulous tendency. If the surgeon sees his patient early, buboes may almost always be avoided. Buboes, then, may be considered as something plus syphilis, they form complications, which it will be my object to describe, for the subject has not obtained that degree of attention from the profession which it deserves.

Why this infrequency of bubo, it is difficult to explain; although some have supposed that the ulceration or inflammation has blocked up the lymphatics which open on these ulcers; others think that an ulcerating surface is a secreting, not an absorbing surface; and this is borne out in some respects by the fact, that bubo rarely occurs in the first week of the treatment of a sore, and hence the plan which we have so strongly advocated, of destroying syphilis by caustic as speedily as possible.

When a patient presents himself with bubo, the first object a surgeon has to ascertain is, if the bubo (and by the term bubo I understand a circumscribed swelling of a *lymphatic vessel, gland, or the surrounding cellular tissue* with or without suppuration) be superficial or deep-seated; next, if it be inflammatory or indolent, and if attended with chancre or not. Having acquired such information, the surgeon will at once be able to class it under one or other of the forms we are about to describe, for whatever be the opinions of authors on the scientific questions, these distinctions are cognizable to the merest tyro in his profession, and hence I have taken them as natural divisions, leading to important practical deductions as to the nature and treatment of bubos.

The most frequent form of bubo which the surgeon is called on to treat among the lower classes at hospitals and dispensaries, is the inflammatory.

SECTION I.

INFLAMMATORY BUBO.

THE COURSE AND TERMINATION of the inflammatory bubo is the following: the first appearance of the affection is frequently the occurrence of an inflamed lymphatic vessel, commencing at the chancre and extending itself along the trunk of the vessel to the pubis, where it may terminate and form a distinct swelling, or may extend itself to one of the superficial inguinal glands. In other instances there is no swelling of the lymphatic vessel, but, in the words of Wallace, page 348:—

“A lymphatic gland, connected by its vessels with the part to which the venereal poison had been previously applied, becomes, sometimes sooner and sometimes later after the application of the poison, a little enlarged, and slightly painful on handling; so as to present the characters of a small tumor, about the size of a filbert, situated under the skin, and moveable between it and the subjacent parts.

“This moveable tumor, which at first seems to be caused solely by an enlargement of the gland, increases in a short time in size, and becomes more fixed, in consequence of the disease extending to the surrounding cellular tissue. At this period, the motions of the leg are somewhat painful and obstructed, owing to the morbid sensibility of the diseased gland, and to the diminished extensibility of the surrounding inflamed cellular tissue.

“The tumor now soon forms a swelling of an oblong rather than of a rounded form, projecting in relief from the parts which surround it. The integuments are however, even yet, moveable on its surface, being apparently unaffected or uninfluenced, and of their natural color.

“After a time, the skin becomes red; and is then found to be adherent to the surface of the tumor, over which it could be previously moved, even after the tumor had become adherent to the subjacent and surrounding tissues. The bubo then for the most part increases with rapidity; the pain becomes of a throbbing kind; some degree of fever sets in, marked by an acceleration of pulse, there is increase of heat, loss of appetite, imperfect sleep, with a general feeling of indisposition; and all these symptoms are more remarkable in the evening and during the night, than in the morning or during the day.

“The swelling now becomes more prominent, and the skin more red and shining, while the tumor still feels hard and resisting; but in the course of a day or two this hardness decreases, and the swelling, which was at first somewhat doughy, soon affords a distinct sense of fluctuation. At this period the shining red skin covering the more prominent parts of the tumor begins to

desquamate, so as to form scaly circles; and afterward assumes a mottled livid appearance.

The livid patches quickly acquire a deeper color, and often becoming partially black, the cuticle separates from them, and giving way, a larger or smaller quantity of thick yellowish-white matter is discharged through one or more small openings. These openings frequently present a ragged sloughy ulcerated appearance, with a red edge and cutaneous margin, and with a white pulpy substance on the inner part of the edge, as if the cavity of the bubo or the surface of the ulcer from which the pus is discharged was lined or covered by a stratum of white matter, resembling that which so frequently covers the primary sore during its stage of ulceration.

"The process of destruction thus commenced in the integuments covering the tumor, extends very frequently until all that part of the skin which had been rendered very thin is removed, and until the bottom of the abscess has been so exposed, that the diseased part presents the form of an ulcer, somewhat resembling, on a large scale, the regular primary ulcer.

"The process of ulceration or destruction ceases, in general, as soon as those integuments which covered the front of the tumor, and which had been very much thinned before the escape of its contents, have been removed. The ulcer thus produced is now quickly filled up by newly-formed granulations, and its diameter at the same time contracting, the areola which surrounded the sore during the ulcerating stage becomes concentrated into a narrow red margin, from the inner edge of which the new cuticle proceeds; and according as the healing process advances, the outer portion of this red margin acquires a callous appearance, while the inner portion forms a red line, denoting the formation of new skin.

"The period occupied by each or all of the foregoing stages of a primary syphilitic bubo, from its beginning until its cicatrization, is so much under the control of adventitious circumstances, that on this subject it is nearly impossible to speak with accuracy. It may however be said, as a very near approximation to the truth, that the regular bubo, if uninterrupted and uninfluenced in its course, will occupy during its various stages a somewhat longer period than that occupied by the regular primary ulcer."

CAUSES OF BUBO.—I need scarcely here repeat, that chancre does not necessarily give rise to bubo; on the contrary, bubo is a rare occurrence in the upper classes of society, where the surgeon sees his patient early, and precautions are taken which poor people are unable, or indifferent in observing.

When, however, the syphilitic virus gives rise to bubo, the investigations of M. Ricord induce us to believe that it may act in one of two ways.

1st. By absorption. 2d. By irritation.

In the former case the virus is directly taken up by the lymphatic vessels, and carried along them, and, under some influence with which we are unacquainted, is deposited on the sides of the lymphatic vessel, which it destroys; it then acts on the cellular tissue in the same way as when introduced into a follicle, and produces a chancre, which causes destruction of the tissues, until it appears at the surface; or, if unchecked, it may be carried along the whole course of the vessel, until it reaches the gland; here it becomes developed, destroying the surrounding parts, and eventually appearing at the surface, as above described.

2. The syphilitic virus may not be absorbed, but give rise to an irritation and inflammation of a simple kind, as any other irritant may, not acting in a specific manner. This irritation may extend along the whole course of the lymphatic vessel, until it reaches the gland, giving rise to the chord above spoken of; or, by a sympathetic action which the extremities of canals exert, the intervening portion of the lymphatic may apparently be free from disease,

and the simple irritation of the surface be communicated to the gland, probably on the same principle that in cases of stone in the bladder pain is not felt along the urethra, but the irritation at the neck of the bladder is accompanied with severe suffering and irritation at the glans penis. We well know, likewise, that tickling the palate causes vomiting.

These various ways in which the syphilitic virus may act do not rest upon hypothesis. Inoculation of the secretion of bubo has clearly proved that a great many buboes exist which secrete the syphilitic virus; thus proving that absorption must have taken place, and that it has been brought in contact with the gland. A case illustrative of this is related at page 305.

PREDISPOSING CAUSES OF BUBO.—If chancre be the cause of syphilitic bubo, it is a fact admitted by all observers, that it is only the direct or exciting cause; in order that bubo follow, there must be some predisposing influence, otherwise bubo would be more frequent than it is in proportion to the number of chancres. We therefore propose now to speak of those circumstances which appear to predispose to bubo.

Age has an influence in producing bubo. Infancy is comparatively free from their occurrence; M. Ricord has, however, seen an instance in a child a month old.

Old age predisposes but little to buboes, in consequence of less exposure to infection, and sluggish absorption; but it is by no means exempt; we have witnessed buboes occurring in old people, and we have at present under our care a female, of a very advanced age, suffering under a severe form of syphilitic bubo.

It is at the adult age that the system seems most liable to bubo, and as exposure to the chances of contagion are at this period most common, we do not feel surprised at a greater liability to buboes existing.

The *Sex* appears to play an important part in predisposing to bubo. Statistics show that the male is more susceptible of bubo than the female; it might be imagined that this circumstance depends upon the greater fatigue to which the male is exposed, compared to that undergone by the female; such an opinion, however, is not true, for experience proves that women employed at the public markets, and who carry great burdens, are rarely affected with bubo, and in a far less proportion than in males who, from their social position, do not exert themselves. Some other circumstance beyond that of occupation is required to explain the greater frequency of bubo in the male.

Temperament may be considered as a predisposing cause. The lymphatic temperament appears to be more favorable to bubo than any other, inasmuch as it predisposes to enlargement of glands; we have not been able to connect the more frequent occurrence of bubo with the other temperaments.

The *Hygienic conditions* of the patient, particularly fatigue, irritation of the part, &c., predispose to the occurrence of bubo more than any other circumstances.

The *Situation* of chancre in predisposing to bubo must never be lost sight of by the surgeon; while the artificial chancre on the thigh has never, in the numerous experiments we have witnessed and made, been followed by bubo, chancre situated around the frenum, meatus of the female, or at the anus, is seldom unattended by bubo. Whatever be the explanation of the fact, there can be no doubt that in the last-named situation bubo follows very frequently.

The *Size* of the chancre does not seem to have the same influence; we have seen very large chancres existing during a long period of time, and yet unattended with bubo; on the contrary, a small chancre, if situated at the frenum, is often followed by bubo.

Treatment of Primary Sores has been repeatedly stated to predispose to bubo, many surgeons believing that, by locally treating the chancre, the virus is

driven into the system. There is not in surgery a more incorrect opinion than this, and we feel disposed to lay down the contrary principle, namely, that the more speedily and effectually a chancre is destroyed, the less will be the probability of the occurrence of bubo. It is true that irritation of a chancre predisposes to bubo, and as the nitrate of silver does not irritate, but, on the contrary, acts as an antiphlogistic agent, its use can not be said to predispose to bubo. However, we do not pretend to state that the use of the caustic will always prevent the occurrence of buboes; and although it will not, in all cases, succeed in preventing them, it will nevertheless render their occurrence less probable. When bubo follows the employment of caustic, the complaint is not usually virulent, and yields readily under proper treatment.

The idea that when a primary sore is treated by mercury, there is less disposition to the occurrence of bubo, has of late years fallen into disrepute, as it has been found that buboes occur during and after the use of mercury; and even Hunter states that mercury sometimes occasions bubo. It is our opinion that mercury has but a slight effect in either preventing or predisposing to the complaint.

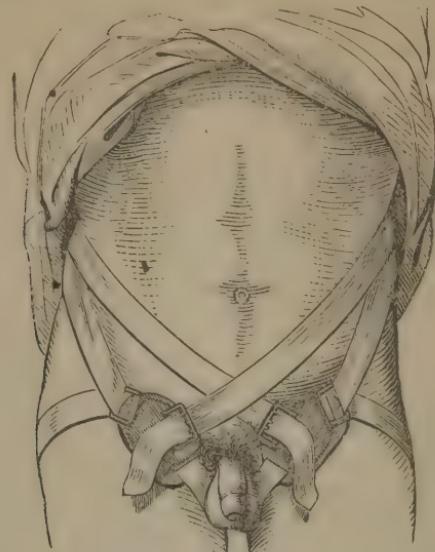
FOR DIAGNOSIS AND PROGNOSIS, SEE INDURATED BUBO.

TREATMENT OF BUBO.—The prophylactic treatment, or the means of preventing the occurrence of bubo, merits our first attention. This is best accomplished by considering the causes, both direct and indirect, which lead to bubo. As speedy a cure as possible of the primary sore is of the utmost importance; for although, as we stated above, bubo does not always occur, although a primary sore may exist several months, nor after the existence of large sores, still, as bubo is a direct consequence of chancre, it should be our object to cure the latter as soon as possible, as no individual can be guarantied from bubo as long as a chancre exists; and our readers, we hope, are convinced that the speedily curing chancre by local means does not render the occurrence of bubo more imminent.

But the surgeon must not depend alone upon a speedy cure of the primary sore; he should consider and choose that treatment which is least likely to irritate it, and this is undoubtedly the use of the caustic in cases of simple chancre. To persons unacquainted with the action of nitrate of silver, it might seem paradoxical to state that its action is antiphlogistic, but we have already, we hope, proved that this is its true mode of action; on the contrary, we should avoid all stimulating applications, or lay them aside if they have been used; absolute repose should be recommended, or if the patient's occupations do not permit this, we must enjoin him to use as little exercise as possible, recommend a suspensory bandage if the sore be on the penis, and use the other means recommended against the occurrence of the complications of chancre. If, in spite of these precautionary measures bubo occurs, or if the surgeon be called to treat a bubo at its commencement (it is indifferent at this stage, *as far as the treatment is concerned, to diagnose accurately the nature of the bubo*), cold water, ice, repose on a sofa or bed, with slight clothing, are among the most potent means for bringing about delitescence of the swelling; cold applications, however, should not be persisted in, provided they cause pain, or when, as in some few cases, they tend to augment the swelling; under these circumstances, or if an individual will not submit to any restraint, the best means of treatment is the employment of compression, either by means of graduated compresses of linen, fixed in their proper position by the figure-of-8 bandage, or the truss of an oval shape, as invented by a pupil of M. Ricord's, and which he constantly employs with the most signal success.

It consists, as seen in the woodcut, of an oval pad, lined with an air cushion; to the inner part of which is fixed a strap which passes around the thigh, and then goes through a pully on the external edge of the pad; it is then brought

back and passed around the loins, and having gained the front of the abdomen, and then the groin, is ultimately attached by means of a buckle to the pad, thus enabling the surgeon to employ compression to any extent.



Truss for Compressing Buboës.

The application of the bandage will be readily understood with the aid of the accompanying woodcut.

Employed at an early period, and in the way above recommended, compression will be found a very advantageous treatment, and will often occasion the disappearance of these swellings, or effect what the French call their *abortion*.

Abortive Treatment.—The surgeon, however, is often consulted when the bubo has already made considerable progress; there is redness of the skin, considerable heat and swelling, but suppuration is not detectible; at this period the usual antiphlogistic means must be employed and vigorously followed up, viz. general bleeding, the use of tartar emetic internally, the local application of leeches, the employment of cold washes or ice, &c. If fomentations be employed, they should be continually changed, and thus warmth and moisture constantly maintained; in place of poultices of linseed meals, the common potato starch, prepared as a poultice by the addition of boiling water, is far preferable; it is not liable to become rancid and thus irritate the skin, it never becomes hard, and has the further advantage of causing continually an oozing of moisture; during the night it is particularly advantageous; in the day we prefer lint dipped in warm water and laid on the bubo, taking care to cover it with oiled silk, and to wet the lint occasionally; by these means we have obtained the happiest results in speedily and effectually relieving all local inflammation. It nevertheless happens that although the acute symptoms are removed, a subacute state continues, or the surgeon is called to treat an indolent bubo; in the practice of the venereal hospitals we have met with many such cases, and we have seen the following treatment attended with success. During the daytime, let the swelling be covered with a plaster composed of ammoniacum and mercury, and compression by means of the truss be made, as recommended in the preceding pages; in the evening let the bandage and plaster be removed, and let a dram of blue ointment be carefully rubbed on the swelling before a fire

during a quarter of an hour, and place an arrowroot poultice over it; on the following day the compression and frictions may be repeated, until all swelling has subsided. In case of the failure of these means, recourse must be had to a more vigorous treatment. It is at this stage that we have seen much benefit derived from covering the tumor with a blister, and, when the epidermis has been thus removed, gently placing the blue ointment on the parts, which may be covered with a poultice; when the blistered surface has healed, a second and third blister may be applied, and the same dressing repeated. The mercury, in all these cases, is employed rather as a local resolvent application than as a specific remedy, consequently it is our object rather to place the ointment on the tumor than to occasion its absorption from the chancre, and thus make it pass through the affected gland—the point that Hunter seems to have had in view; of course, should salivation ensue, the employment of mercury should be instantly laid aside, and the usual means of treating ptyalism be had recourse to.

In all the plans previously recommended, it will, we hope, have become apparent that our object is to cause the resolution of the tumor by absorption, and prevent suppuration; experience, however, proves that these much-wished-for ends can not always be attained. When bubo follows a chancre, and when, consequently, we have every reason to suppose that absorption of the virus has taken place, and has been carried into a gland, all our endeavors to promote resolution will too frequently fail; still, under such circumstances, it is better to act as if the bubo were caused by irritation, and not despair of dissipating the swelling, for we are no longer living in the good old days of Humorism, when it was supposed that that surgeon was the best, who by every means in his power would assist nature in chasing all the peccant humors from the body. For this purpose, in place of dressing a blistered surface with the blue ointment, let a piece of lint dipped in a solution containing twenty grains of corrosive sublimate to one ounce of water be applied, and kept on the denuded skin for two hours, or a shorter time if it cause great suffering to the patient (a circumstance almost constant); let a poultice on which some laudanum is poured be applied and frequently changed; in consequence of this caustic application an eschar will be formed, and when it falls off, the sublimate may be again employed or not according to circumstances. Under this treatment indolent buboes will get rapidly well: when employed in virulent swellings, (see p. 305), the pus is often seen oozing through the cauterized part, and on the separation of the eschar the true nature of the specific bubo is at once seen, forming, in fact, a chancre which is brought into view by the destruction of the walls of the abscess. Blisters, then, and caustics, may be said either to promote absorption, if that be possible, or to hasten the opening of a virulent abscess, before it has had time to undermine the surrounding structures. There is, however, a great objection to the employment of the corrosive sublimate: it causes great pain in its application, and leaves considerable cicatrices, which are indelible marks of the disease; consequently the surgeon should use them with discrimination, and only in cases where all other means have failed.

When a patient presents all the signs of fluctuation in the swelling—when the skin is thin, livid, &c.—the methods recommended above are worse than useless, by the loss of time occupied in their employment; the virus within extends itself on all sides, and the abscess, when opened, will be found very extensive. To avoid these consequences, the surgeon should open the abscess on the very first symptoms of the occurrence of pus; provided the case be virulent, an opening should be made, for it would be useless to expect absorption. The incision should be made in the direction of the greatest diameter of the tumor. In the inguino-crural region, it is in the direction of Poupart's ligament; in the case of suppuration of the vertical glands of the thigh, it is in the direction of the axis of the limb that the incision should be made. Incisions

on these principles do not expose the patient so much to subsequent burrowing or secondary abscesses, or cause crucial incisions to become necessary at a later period.

If it be an important question to decide on the proper direction of the incision, it becomes a no less one to consider its length; in small abscesses a simple puncture is usually sufficient, particularly if there be no reason for supposing that it is not a virulent bubo; in such cases a free incision is unnecessary, but when there is a large quantity of matter, when the skin over the abscess is livid, blue, and thin, when we suspect its virulent nature, and that it has undermined to a considerable extent the surrounding parts, a free incision is absolutely requisite; for in such cases we can not expect that the skin will become attached to the parts below. The same principle holds good, likewise, in cases of fistulous openings which extend on either side; they should be freely opened, for, unless this is done, cicatrization will not take place. It is quite unnecessary to press out the pus; such pressure gives rise to pain, and the use of the tent is only requisite in cases of non-virulent buboes, as in others the virus will inoculate the cut surfaces, and prevent closure of the opening.

TREATMENT OF SUPPURATING BUBO.—When the surgeon is consulted at this period, or when a bubo has been opened, the treatment must vary with the circumstances of the case. In the majority of instances, the treatment is similar to that recommended for chancre and its complications. Should inflammation, phagedæna, or gangrene be present, the specific nature of the bubo should be lost sight of, and the usual treatment of those affections employed; this having been pursued, we should turn to the treatment of the specific disease: care should be taken that the virus does not remain in contact with the surfaces which secrete it; this is avoided by the use of baths, washing the part often, and the employment of astringent lotions; position may often be useful in allowing the secretions to pass away. Such treatment, combined with cauterization of the abscess, will usually succeed in bringing it to a happy termination, and cicatrization will follow, healthy granulations filling up the cavity of the abscess.

This, however, will occasionally be retarded by an indolent state of the bubo, by the skin presenting livid, thin edges, or being undermined by the disease; in the latter cases, it is useless to expect that granulations will spring up as long as these portions of skin remain around the abscess; their removal is therefore indispensable. This may be effected by snipping them off with a strong pair of curved scissors. Patients have often a great objection to the use of instruments, and they may be very readily replaced by employing the Vienna paste,* which, by virtue of its caustic properties, not only removes the superfluous portions of skin, but likewise causes the surrounding parts to take on a healthy action.

When the edges of the suppurating bubo ulcerate, when it extends daily, or remains stationary, M. Ricord fills the abscess with the powder of cantharides, and orders a blister on the edges of the bubo; the following morning, if induction exists, the edges of the blistered surfaces are dressed with lint, on which mercurial ointment is spread, and the abscess is washed with an astringent lotion; should it be a simple bubo, common dressing or applications of lead wash to the blistered surface, and the astringent lotion to the abscess, are sufficient.

This treatment, with the powder of cantharides, is not so painful as might be imagined; healthy granulations spring up, and the whole character of the sore is changed, and it will be often necessary to check the exuberance by the ni-

* The *Pâte de Vienne* is composed of five parts of caustic lime, and six of caustic potash. (See page 262.)

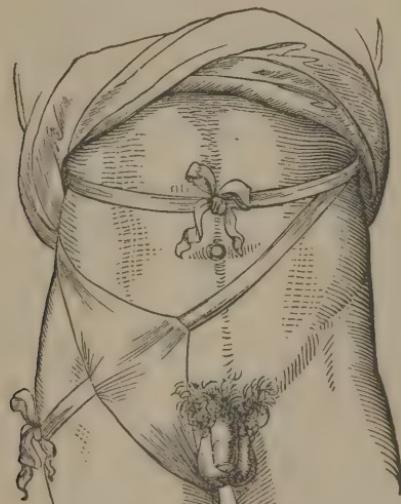
trate of silver; in consequence of the extent of the disease, cicatrization will often take place imperfectly or irregularly; the usual means of lightly passing the caustic over the surfaces will be found advantageous; when the cicatrix is livid and indurated, it should be destroyed by repeated and partial applications of the Vienna paste, and a more healthy surface will be the result.

Should induration of a specific kind follow a bubo, the general constitutional treatment with mercury must be had recourse to, and be guided by the same principles as were laid down in speaking of indurated chancres.

In scrofulous constitutions, the tonic and general treatment must be had recourse to: change of air, a nutritious diet, tonic medicines, particularly the various preparations of iron, together with local stimulants, should successively or conjointly be had recourse to.

Lastly, in chronic indolent swellings of the superficial or deep-seated glands, neither local nor general treatment will suffice to remove the swollen state, or to remedy the various obstruction to the venous and absorbent system; in such cases recourse must be had to the *Pâte de Vienne*: a superficial layer is laid on (see page 262), and when the eschar falls off, another and another may succeed; replace it, until at length the whole mass of enlarged glands has disappeared. This process is often indispensable, although very painful, and is far preferable to excision, as recommended by some authors.

To maintain poultices or dressing on the bubo, or even to employ compression by means of lint, I can strongly recommend the inguinal bandage, the application of which is well seen in the annexed wood-cut.



Inguinal Bandage.

SECTION II.

INDURATED BUBO.

In treating of indurated chancres, the reader's attention was called to the constant occurrence of indurated glands in the groin, and it was stated that, in a diagnostic point of view, the existence of these indurated masses is very important.

When a chancre assumes the indurated form, several superficial glands become enlarged to the size of horse-beans, generally most numerous on the side on which the chancre exists. This enlargement is attended with no pain, but it has an elastic feel, and the patient will tell you that he has no bubo. The glands may remain in this indolent state a long time, showing no disposition to suppurate; should they be opened, the secretion they contain yields no inoculable virus, and the inoculated points heal like any simple puncture. Such is the course of the true indurated bubo, but, as in the case of indurated sores, we meet with many varieties: thus, if inflammation attacks it, the bubo may assume a phagedænic action, but still such complications are unusual.

The DIAGNOSIS is generally simple enough, when, together with an indurated sore, we find several glands in both groins enlarged, which have no tendency to suppuration; whereas, in the inflammatory bubo, we meet with enlargement of one gland only, which soon hurries on to suppuration.

The diagnosis of the scrofulous bubo may be generally made by observing that the swelling commences in the deep-seated glands; these, although small at first, may assume a very considerable size, and may or may not suppurate. Moreover, the swellings are unattended with indurated sores, although they may have often been preceded with local irritation of the penis, which may have passed away under appropriate treatment, but left no induration. When induration comes on around the edges of an open bubo, the diagnosis will be governed by the same laws that apply to indurated chancres, to which I refer my readers.

"The diagnosis of a *virulent* bubo before suppuration takes place may be judged of from the following circumstances: When a sore has existed which has not become indurated—when it (the bubo) occupies a few or only one gland, and that toward the centre of the groin—or when its base is moveable—immediately an opening is made into it (either by an instrument or by nature), the edges become inoculated with the secretion, and present an everted, detached border, and expose a true chancre at the base of the gland."—*Dr. McCarthy's Thesis*, p. 19.

"Scrofulous bubo is so characteristic, that at a glance it may be recognised. It is voluminous, occupying the entire inguinal fossa; a large number of inguinal glands are simultaneously affected; the base is immovable, and appears lost in the iliac fossa, or rather appears continuous with a similar affection of the glands in the pelvis. If the swelling bursts, it does so like other scrofulous tumors; the pus is collected into various little abscesses; their different orifices do not enlarge, but become puckered, and take on a character *sui generis*, presenting those ill-shaped cicatrices and ill-conditioned sores seen in softened tuberculous glands."—*Loc. cit.*, p. 20.

The lymphatic glands of the groin frequently remain enlarged after the entire disappearance of the ulceration which has given rise to them; when met with, our suspicions should be excited that previous sores have existed.

In chancres at the anus, the position of the enlargement of the inguinal glands deserves notice. Should the sore be situated at the posterior margin of the anus, the bubo will form on the upper and outer edge of the groin, as the lym-

phatics enter at this point; and when bubo is met with in this situation our suspicions should be excited. If, on the contrary, the anal chancre is seated on the anterior margin of the anus (its most usual situation), the bubo will form on the internal corner of the groin, the rendezvous of the lymphatics, which pass under the pubis. On examining the gut, we shall very often find an indurated chancre situated among the folds of the anus, which must be carefully examined, as the patients are not likely to acknowledge the occurrence of these sores.

PROGNOSIS.—Viewed in reference to this point, indurated bubo is of the utmost consequence. When a well-marked case presents itself, I would advise the surgeon at once to inform his patient that he is laboring under a severe form of disease. The local inconvenience is often so slight, that the patient scarcely takes any cognizance of his complaint, and is too apt to neglect the surgeon's advice: the result is, that the local symptoms continue for a long period, neither improving nor getting worse, until secondary symptoms break out on various parts of the body. The occurrence of constitutional symptoms after indurated bubo is so constant, that the patient should be warned of their probability, or rather certainty; and if he neglects his treatment, the surgeon can not be blamed, which he assuredly will be unless the results of the case are predicted. Often do patients come to me with secondary symptoms, complaining that their late medical attendant pooh-poohed the small ulcer, which healed under some astringent wash, leaving an induration in its place, and they recommenced their ordinary mode of living in the full belief that they were quite well, when a full crop of secondaries caused them to lose all confidence in the surgeon, who never foretold the probable occurrence of these lamentable results.

Frankness on the part of the surgeon will often cause the temporary loss of the patient, who goes away dissatisfied with the prognosis. He calls you a croaker, and consults some other practitioner, who encourages the idea that his case is a simple one; but let the surgeon be assured he will, in a few weeks, see his patient return penitent, and willing to undergo any treatment that he may wish to prescribe.

Although John de Vigo first pointed out the importance of induration, and notwithstanding that Hunter described the sore which now bears his name, still it was left for M. Ricord to point out the true value of this symptom, particularly this coexistence of indurated chancre and bubo, to which I now call the attention of my readers.

It had not escaped previous observers that secondary symptoms were uncommon in instances where buboes suppurated; and in this view many authors have favored the suppuration of buboes, in the belief that by doing so, secondary symptoms could be avoided. These surgeons, however, did not, like the able professor of the Hopital du Midi, study the natural history of syphilis by non-interference with the usual course of the complaint; had they done so, they would have found that the suppuration of a bubo had nothing to do with the prevention of secondary symptoms. Experience would have told them that the virulent bubo, namely, that bubo caused by syphilitic virus in the lymphatic (see page 305), will suppurate, do what we will; but, as the swelling is never attended with induration, it will not give rise to secondary symptoms. Viewing cases thus imperfectly, they failed to discover what experiments have now demonstrated—that, do what we will, indurated bubo will seldom suppurate; and even if it could be made to suppurate, secondary symptoms would occur notwithstanding, provided the chancre and bubo have previously been indurated. The same experience which has taught us this sad lesson has not failed likewise to demonstrate that, treat a case on the best possible principles, we never can guaranty a patient from constitutional symptoms.

When the syphilitic diathesis is once firmly established, a cure is not speed-

ily attained. This is a lamentable fact, but it is no less true. The surgeon may attempt to forget it; he may flatter himself with the belief that he can in all cases cure syphilis; but a few years will pass and he will awaken to the realities of the subject, and will ultimately learn that his patient has consulted other practitioners, on account of relapses of secondary symptoms. These admissions must be very unsatisfactory to those who have spent their lives in the study of venereal diseases, and are presumed to have acquired an intimate knowledge of the complaint, but truth compels them to be made. It is annoying to acknowledge defeats: statistics of unfortunate operations are seldom published in our profession, except when they creep out through some cross-examination, or are made public by some zealous opponent. It requires no little moral courage to mention instances which give these unsatisfactory results; but when a surgeon has attained the scientific reputation of M. Ricord, he can afford to acknowledge his failures, and state that even in his practice success does not always follow—showing that, although he has done so much to enlighten us on the treatment of syphilis, much remains for his successors to effect in carrying out his views.

TREATMENT.—On this subject I have nothing to add to that stated in the section on Indurated Chancre, to which I must refer my readers, where the mode of administering mercury is so fully detailed, that I could only repeat what is there stated.

CHAPTER III.

SECONDARY SYMPTOMS; OR, CONSTITUTIONAL SYPHILIS.

DEFINITION.—We include under this term those various morbid phenomena which appear on the surface of the skin or mucous membranes, but do not affect the sub-cutaneous or sub-mucous cellular tissue. They are the direct consequence of absorption into the circulation of the syphilitic virus, giving rise to constitutional affections which are hereditary, or, in other words, capable of transmission* from the mother to the child, but incapable of inoculation. Under this head likewise we place syphilitic iritis and affections of the testicle.

SYNONYMOUS TERMS.—Secondary symptoms have been variously designated by different authors. Some writers have grouped under the term *syphilis*, not only (what we now understand as) primary, but likewise secondary symptoms, without distinguishing them from one another, or from other diseases. This confusion of terms is not surprising when the difficulties attending the subject are considered, or when we recollect the erroneous notions that have been entertained on this department of surgery.

The same observations apply to *syphilitic affections*, a term which includes indiscriminately everything which resembles the disease we are describing, and one which, as at the present day, has often no very definite meaning.

Morbus pustularum, la verole, la grosse verole, are likewise synonymous terms; more modern writers have spoken of *lues, constitutional syphilis, accidents sec-*

* The material cause of the phenomena in secondary symptoms is considered by Mr. Simon to be soluble, as shown when the fetus-in-utero contracts the disease from its mother; for between the circulating systems of the mother and child there can be no other communication than by fluid matters. In some other specific diseases the material cause is volatile; for persons having no contact with the patient, either directly or (except by the atmosphere) indirectly, are likewise liable to contract the disease; this never happens in secondary symptoms.—*Lectures on Pathology*, p. 262.

ondaires, or constitutionels, as distinguished from the local, primary effects of syphilis. We shall, in the following pages, employ the term *secondary symptoms*, as it enables us at once to classify the various affections met with in practice; and it has the additional advantage of being generally accepted. We shall, however, attempt to give a more distinct character to the complaints we are about to treat of, and avoid that vagueness of expression which has distinguished some writers on this interesting division of syphilis.

HISTORY.—If we admit that primary symptoms were described and known to authors long before the discovery of America, &c. (see Introduction, pages 7, 8), we might naturally expect that secondary symptoms likewise existed; and from the description in the Bible, as well as in the Arabian, Greek, and Roman authors, little doubt remains that secondary symptoms constituted a large proportion of the diseases of the skin, then so prevalent; we should, however, add that authors do not seem to have been aware of their relation to the primary affection.

Toward the close of the fifteenth century we find secondary symptoms more fully described as following primary sores; but even at this period the greatest uncertainty surrounded the subject.

We owe to Fernel, however, in 1556, the first accurate description of secondary symptoms; he first pointed out the relation that secondary symptoms bore to the primary, and it is this distinction which has so greatly assisted and contributed to an accurate knowledge of the former.

In 1784, Hunter, adopting that classification of Fernel, further sub-divided venereal diseases into *sympathetic* and *virulent*. The virulent he again classed under two heads:—

1. Those which appear during the first stage of the lues venerea.
2. Those which are observed at a much later period.

In the former he placed eruptions on the skin and affections of the mucous membrane; in the latter, diseases of the periosteum and of the bones.

We are, however, principally indebted to M. Ricord for having recently introduced a classification of constitutional syphilitic affections, which we are confident our readers will consider the most perfect hitherto proposed. Following Fernel, he has separated primary from secondary symptoms, and has shown us how to distinguish them; adopting also the views of Hunter in some points, he has differed from and improved upon that eminent surgeon's classification, and the second division of Hunter he has preferred to place in a separate order, and call them *tertiary symptoms*. The reasons for this deviation from the doctrines of our great master will be given in their proper place.

SECTION I.

SECONDARY SYMPTOMS.

GENERAL OBSERVATIONS ON.—In our definition we have stated secondary symptoms to be the direct consequence of absorption into the circulation of the syphilitic virus, which acting as a poison on the animal economy, produces those constitutional affections we are about to describe.

It might appear that this opinion, now generally received, has been based on direct experiment. Such, however, is not the case; no one, to our knowledge, has ever attempted to inject the virus into the circulation. The probable consequences of such an experiment would be so severe that no medical man would undertake it, nor would any one be justified in thus experimenting upon his fellow-creatures; and as the syphilitic virus has no constitutional effects on

animals, we are deprived of two of the most valuable adjuncts in our investigations. Medical men must be still then content to collect such observations as daily experience furnishes, proving that secondary symptoms are the result of absorption of the virus into the general system.

The occurrence of secondary symptoms after primary sores, has been now so frequently observed, that I shall take it for granted that constitutional syphilis is always preceded by a chancre situated in some part of the body. It is no less true, however, that every chancre is not followed by secondary symptoms; were this not happily the case, constitutional syphilis would still be infinitely more common than it is. My readers must be well aware that the simple and the phagedænic sore are rarely followed by constitutional syphilis, whereas the indurated chancre rarely if ever fails to be succeeded by the most positive secondary symptoms. Such being the case, it becomes of great moment to consider the predisposing causes of indurated chancre; but if the reader will turn to that chapter he will see that notwithstanding all our investigations we are in almost entire ignorance of the predisposing causes of induration, but live in the hope that one day it may be discovered; we no longer, however, believe, that there are different *viri* to account for this diversity.

It is curious to observe that some persons may frequently contract chancres which will neither become indurated nor be followed by secondary symptoms; in other instances, the first chancre a patient will contract, may assume a hardened base, and be succeeded by constitutional syphilis; the same person who at one time of the year is refractory to constitutional infection, shall have it during the same twelvemonth, or the next year; these are among the extraordinary phenomena we meet with, and which we are at present unable to explain, unless we say they depend upon peculiarities of the individual.

M. Ricord lays it down, however, as a recognised truth, that a person who has once had secondary symptoms, possesses by the very fact, an immunity from a second attack; that as vaccine will act but once, so will constitutional syphilis. A patient may have relapses of secondary symptoms dependent upon this primary affection, but let him once get entirely well of constitutional syphilis, and although in future he may contract primary sores, these will not be followed by secondary symptoms.*

I would, by no means, dispute the statement of my late master, but point out the difficulties which may be further investigated by others under the different circumstances of climate and race, so as to throw additional light on the question; and to assist them I shall allude to the

PREDISPOSING CAUSES.—Observation of many thousands of cases shows that these consist in circumstances not immediately connected with the individual, nor apparently dependent on his constitution.

It can not have escaped the observation of those of my readers who have seen much of syphilis, that

* Dr. McCarthy, in his Thesis says: "Among these 193 patients, 34 had had other attacks of primary symptoms, but no one of them had suffered twice from indurated chancre." "Like small-pox, perhaps, constitutional infection only shows itself once in the same individual; however frequently relapses may occur, a return (recidive) is very rare."

He goes on to say, "M. Ricord accidentally inoculated himself twice in the hospital; in 1835, for the first time; the sore became indurated, secondary symptoms followed, and a mercurial treatment cured him. In the month of October, 1843, he inoculated himself accidentally a second time; the chancre which followed, as well as an inoculation from it (in order to test its nature), far from becoming indurated, took on a phagedænic action; it was only at the conclusion of the sixth week that cicatrization took place. Mercury was not administered."

"In conclusion," says Dr. McCarthy, in 1844, "it was only after a very long observation that M. Ricord arrived at the conclusion, that secondary syphilis does not occur twice in the same patient, and it is only in a recent lecture that he has declared this is to be the result of his experience."

Pearson says: "In lues venerea person may be affected with constitutional symptoms time after time. We have not seen many instances of this kind, but are certain of the fact. Persons who have suffered from secondary symptoms are generally more cautious for a time, but if they do contract a fresh infection they seldom delay long in applying for advice, and hence constitutional symptoms are not often observed in the same individual a second time."—*Manuscript Lectures*, p. 55.

*Climate** and *changes of temperature* have a considerable influence on the production of secondary symptoms. Rapid changes from heat to cold, as witnessed in persons leaving the warm wards of hospitals for their own damp, cold dwellings, place this beyond doubt. Travellers state that the passing from cold to warm, and from warm to cold climates, produces a great disposition to the same effect.

Clothing, particularly such as is slight and insufficient to maintain an equable temperature, has been accused, with reason, of predisposing to secondary symptoms.

The use of *spirituous liquors*, *highly-savored* or insufficient food, *excitement* of all kinds, *moral* or *physical*, are some of the usual predisposing causes.

Among the circumstances appertaining to the individual, we may first speak of *age*.—It rarely happens that a child is born of a mother suffering under secondary symptoms, without becoming affected soon after birth, particularly if exposed to cold. When the period of infancy has passed, as the child is seldom exposed to contagion, the occurrence of secondary symptoms is very rare. From similar circumstance, and the torpid state of the lymphatic system, they are rarely met with at an advanced period of life.

Sex.—It is hardly necessary to say that men are more liable than women, in consequence of the former exposing themselves to the chances of contagion more frequently; but we think the statement no less true, that if the same risks were run by the two sexes, the female is less predisposed than the male. This assertion is supported by the cases we have observed in the Parisian institutions. In the male hospital, cases of secondary syphilis are very common; in the hospital of l'Oursine (the female one), during our duties there, out of four hundred in-patients, we observed few cases of secondary affections. The same remark we made in visiting the foul wards at St. Lazarre, devoted to the treatment of the prostitutes of Paris. The reason, we think, is the following: The female, though frequently the subject of chancre, is yet, from her sedentary and quiet life, less exposed than the male to the influences mentioned above. We are further borne out by the fact that common prostitutes are much more frequently attacked with secondary symptoms than that large class of unfortunate females, consisting of poor married women, to be found at l'Oursine.

Temperament.—Its influence, as a predisposing cause is very evident, and some authors state that the lymphatic is the one which, most particularly disposes to the affection. That this is often the case is true, but those who have attended to the subject must be aware that the same individual, in the course of the year, may contract chancres. The first will pass away, the second may be often attended with secondary symptoms, or *vice versa*. Again, often do we see the strongest men attacked, and the feeblest escape. It must, however, be

* "Climate, and the extremes of heat and cold, exert a powerful influence on all venereal affections; indeed, I know of no disease in which so marked a difference may be observed, even in the different countries of Europe and those bordering on the Mediterranean: this difference I have remarked in the northern parts of Spain, and in the various hospitals of Lisbon, Paris, Berlin, and Vienna, as well as in Italy and the north of Africa."—*Austria, its Medical Institutions*, p. 186.

Dr. Clarke, in his report of syphilis in India, published in the "Madras Quarterly Medical Journal," vol. i, page 405, states that only three cases of secondary symptoms followed in fifty men treated without mercury during the year 1835, in India. He thinks it however, probable that secondary symptoms would have more frequently occurred if the men had been treated in England, as the disease is milder, and a warm climate does not predispose to the after-consequences, but favors a cure. "In tropical regions," he adds, "disease is of the most acute kind, and rapid in its progress, without entailing such a host of chronic complaints, but in warm climates fever and dysentery usually kill the patients."

He mentions having seen a sailor in the Royal Naval and Marine hospital at Woolwich, who had been with Captain Parry to the North Pole. This man entered with his palate almost entirely destroyed by ulceration. He acknowledged having some years previously suffered from venereal, and was perfectly well on embarkation; but when he arrived in the frozen regions the secondary disease made its appearance.

Dr. Clarke states, page 408. "For many months no case of secondary disease may show itself, but in other months there may be several in succession."

allowed that a large proportion of secondary symptoms occurs in persons who have been reduced by illness or some other cause.

Brodie relates the following singular case of relapse coming on under similar circumstances :—

"A gentleman had secondary symptoms, and I put him through a *course of mercurial inunction for ten weeks*. He was confined to the house, and most carefully attended to, and took mercury for some weeks after the eruption had disappeared. He seemed to be quite well, and went abroad, and continued so; but at the end of a year, being in Lisbon, he went out, got his clothes wet, and took cold. This was followed by a severe attack of erysipelas; and a Portuguese doctor, very indiscreetly, bled him to a large extent, and an enormous abscess formed. His health became completely broken down, and he had now a return of the venereal disease, the symptoms being worse than they were before. When his health had improved, a surgeon in Lisbon put him under another course of mercury and cured him."—*Lancet*, February 17, 1844; page 678.

Surgeons who are called upon to treat secondary symptoms can not but have remarked the number of their patients presenting that clear complexion which has been attributed to scrofulous subjects. I do not, however, assert that secondary symptoms are confined to such individuals; but on being consulted for primary sores by patients with dark hair, clear brown complexions, and great transparency of skin, I have too often predicted the occurrence of induration, and the subsequent train of secondary affections.

Local Irritants.—I must not fail to number under the head of predisposing causes the effects of certain irritants, which have the effect of determining secondary symptoms to different parts of the body. Thus, in prostitutes who labor under habitual discharges which keep the labia moist, secondary symptoms will occur only in these situations, and this is so common, that gonorrhœa is supposed to cause them; the error of this we have already shown. The same observation holds good of persons who determine secondary symptoms to the lips and tongue by smoking short pipes, the disease seemed concentrated on those parts only which are stimulated by the tobacco-oil. In a nurse, the nipple alone may be the seat of the disease, provided she has the syphilitic dia-thesis, although apparently healthy at the time she first takes charge of the child.

PROBABLE MODE IN WHICH CONTAMINATION OF THE SYSTEM TAKES PLACE.
—After reviewing the causes which are found to predispose to the occurrence of secondary symptoms, it may not be uninteresting to collect all that is known on the *modus operandi* of the syphilitic virus, in the hope that it may render this obscure subject more intelligible to my readers. Experiments have clearly proved that the lymphatics and veins carry on absorption; and although, as we stated in speaking of bubo, physiologists can not explain the mechanism of the operation, the virus is undoubtedly borne along the vessel, as inoculation detects the unchanged virus in the absorbent glands.

Observation, however, induces the modern surgeon to believe that the absorbents do not carry the virus farther than the first absorbent gland: there its farther passage is stayed. It produces local mischief, virulent bubo forms, and the virus is eliminated as any foreign body is. Certain it is that secondary symptoms rarely follow suppurating bubo, and the absorbent glands seem to answer the purpose of advanced works, which impede or prevent the approach of the enemy.

It would seem, then, as almost certain, that the mechanism of absorption of the virus in constitutional syphilis depends upon the veins, and this is further rendered probable by the analogy of the symptoms to those which follow when poisons are injected into the veins.

At the present day the comparison is feeble, but in the fifteenth century, when that famous epidemic reigned, we learn that livid patches appeared, that the ulcers on the skin were haemorrhagic. Everything, in fact, bespoke a liquefaction of the blood, such as is occasionally witnessed even at the present day.

The *modus operandi* of poisons is still enveloped in much obscurity. Mr. Simon has, in his recent Lectures, page 276, combated the application of Liebig's theory of fermentation as affording an explanation, and prefers considering the phenomena to be chemical, of that class of chemical actions called *catalytic*, where chemical combinations are modified by the presence of a body which itself either remains unchanged or at least does not enter into those new combinations determined by its contact.

He further considers that the constituent of the blood which is affected is not the blood corpuscle, albumen, nor the salts, but that the fibrin and the so-called "extractive matters," representing the "waste of the tissues," are the elements concerned. Mr. Simon thus sums up his theory: "That certain materials of the blood—materials not essential to the performance of its nutritive functions—are, by certain circumstances, rendered liable to undergo definite and specific changes, under the influence of which they become determined, with increased rapidity, to the outlets of the body, and irritate these outlets in their passage; that these changes continue, until the materials affected by them are completely exhausted from the blood; and that the severity and duration of these changes is in proportion to the quantity of material seeking elimination: that the new matters engendered and evolved under these circumstances are capable, in various ways, and with more or less certainty, of producing a precisely similar succession of changes in the blood of another individual, or of any number of individuals; operating always on the same ingredient of the blood as that whence themselves arose, and determining it to the same outlet as that whither themselves were determined; so that the choice of material in the blood, and the choice of outlet in the body, constitute specific characters for the several morbid poisons distinctively, and so that the final products act always as special catalytics for that original material of the blood wheresoever they may encounter it."—*Lectures on Pathology*.

Whatever be the *modus operandi* of the poison, observation teaches us that frequently no manifestation by external symptoms will accrue as long as the general health is good; but when the predisposing causes come into play these secondary symptoms become developed, although the blood presents nothing particular; inoculation likewise has no effect; in the more advanced stages the blood is found deficient in iron, and this is all we can say. Now, although it appears that the blood is affected, it is only the skin and mucous membranes, and the superficial organs which participate in the disease. Why this should be the case is among the many questions which the pathologist may ask himself; he will in vain seek an answer. But if the disease is unchecked, and allowed to go on, deeper tissues will successively be attacked until tertiary symptoms appear.

The period at which secondary symptoms appear after the occurrence of the primary ones, deserves to arrest our attention. It is impossible to limit exactly this period. The earliest term at which they may occur, is eight days after the appearance of primary sores. M. Ricord relates such an instance. It happened in a tailor, who, at the end of the week after the occurrence of chancre, had well-marked secondary symptoms. M. Cullerier has likewise mentioned a similar case. Excepting, however, such instances, which are rarely met with at the present time (although we believe them to have been very common in the fifteenth century), secondary symptoms usually show themselves about six

SECONDARY SYMPTOMS OF SYPHILIS.

weeks or two months after the appearance of the primary sore.* Of the importance of knowing this fact, we have been more than once convinced: patients come into hospitals six weeks after the occurrence of an indurated sore; mercury is given, and in a few days a brilliant display of secondary symptoms breaks out, occasioned, as some think, by giving mercury. M. Ricord has often shown us the natural course of the disease by abstaining from any treatment, and the well-known secondary affections soon appear.

Can this period be delayed? It can; as we have had ample opportunities of observing. When due precautions are taken, no excesses or exposure to cold submitted to, weeks may pass over, without secondary symptoms appearing; but, under the influence of predisposing causes, they will suddenly break out, and recur with more or less virulence, at uncertain periods for a number of years to come if not treated with medicine. In admitting this, however, let us by no means be supposed to give credence to the stories so often told of a sore being healed without mercury, and secondary symptoms occurring, not within six weeks or six months, but six years after. These statements we treat as fabulous; observation induces us to state that if a sore gets well without mercury, and the patient does not suffer under secondary symptoms within six months, they *never will occur*; he has a perfect immunity from them, provided he contract no second sore.

But if the sore be treated with mercury, the patient *may, it is true*, remain free from secondary symptoms some *months*, yes, perhaps *years*. They may be so slight as to pass unnoticed, or, lastly, such a patient may escape secondary symptoms altogether, and years will pass when the tertiary forms will break out.† Such consequences as these are rare, but the surgeon must be aware of their occurrence, and be prepared to meet consequences; and this is what is meant by the syphilitic diathesis. In considering the subject, syphilis is not so unlike other viri, such as the vaccine, it takes possession of the system, and during its abode gives the constitution an immunity from small-pox; but we have it on undoubted evidence, corroborated by Dr. Gregory, that in some constitutions its effects become worn out, and fresh vaccination is required. Now, mercury is an antidote to syphilis; why should it not wear itself out? or, why rather should not the good effects it has produced be worn out after a lapse of months or years? These are inscrutable matters, which we are unable to understand.

* Dr. McCarthy says: "In analyzing my 123 observations, I attempted to show the period which elapsed between the occurrence of primary and the different forms of secondary symptoms.

Forms.	The shortest interval.	The longest interval.	The average.
Roseola - - -	2 weeks	13 weeks	7 weeks.
Papulae - - -	6 weeks	16 weeks	10 weeks.
Condylomata - -	4 weeks	15 weeks	7 weeks.
Vesiculae, 3 cases	4 weeks	5 weeks	
Pustulae - - -	11 weeks	33 months	9 months.
Tubercles - - -	5 months	18 years	10 years.

"These, on a small scale, corroborate M. Ricord's opinions, made on a larger one. We thus find that one symptom succeeds the other in a graduated scale, commencing with the most superficial, until we arrive at the deeper seated ones. In our experience we have never seen the superficial forms of syphilis succeed the deeper ones; and this sequence is so regular that in the majority of cases, a secondary symptom being given, it is frequently possible to say how long since the indurated chancre existed."

† Pearson says: If a man indeed be imperfectly cured of secondary symptoms, he may have a trace for a considerable length of time, and if the imperfect exhibition of the remedy be then (upon a first, second, third, or fourth appearance of the symptoms) repeated, the symptoms may be protracted to an indefinite length of time, but we have never known the disease to be dormant when no mercury has been used."—*Manuscript Lectures*, p. 54.

PREMONITORY SYMPTOMS.—Ricord gives the following excellent account: "The manifestations of constitutional syphilis may appear in the second or third week after contagion; but the general rule is about the sixth week, and it frequently happens that they do occur in the third month. The complexion then begins to alter; the skin loses its natural brilliancy, and assumes a dull earthy hue; the eye gets dim; the patient loses all bodily and mental vigor, becomes inactive and sad; the hair gets dry, and loses its smoothness; giddiness and headache set in; there is great uneasiness about the neck, and a peculiar supra-orbital pain. The head symptoms generally begin in the evening, and cease toward morning; reclining and the warmth of the bed increase them greatly. It is not quite correct to give these symptoms the name of *nocturnal* pains; for they are entirely dependent on the bed and the horizontal posture, since bakers and gay people, who go to rest by day, have them immediately they lie down. The supra-orbital region seems to be the point the most liable to these pains; and when the latter are very acute, the patient feels as if his eyes were being driven out of their sockets. The affected parts do not, however, present any redness or swelling, nor are they painful to the touch. The headache is sometimes strictly symmetrical, and by occupying one side of the head only, it entirely stimulates hemicrania or intermittent facial neuralgia; but with all this there is no apparent lesion observable yet. If the disease be allowed to proceed, the neuralgia, which had begun in the fifth pair, attacks the seventh, and produces paralysis of the face; and if we were not guided by the chain of preceding symptoms, we might easily ascribe the whole mischief to rheumatism. I have often treated cases of this sort, and I almost always succeeded in curing them by iodide of mercury. I have even met with instances where the seventh pair was primarily attacked, without any previous neuralgia. After all these symptoms, sub-sternal pains come on, which latter Baglivi looked upon as symptoms of latent syphilis; then circa-articular uneasiness, accompanied with great lassitude in the limbs, just the same as happens before eruptive fevers. These articular pains are not situated in the centre of the joint, but all around it; they are fugacious and intermittent; they do not produce any swelling or redness in the part, and are not augmented by pressure; they are vague, erratic, and nocturnal, presenting the same characters as the cephalalgia which I mentioned a little while ago. Just about this time the posterior cervical glands begin to get involved. This symptom is sure to be present, at least, ninety times out of one hundred cases. These glands are situated at the back of a vertical line falling from the posterior margin of the ear, and their being attacked is a fact the more characteristic of syphilis, as they are found nearer the vertebral groove and at the roots of the hair; those situated on a level with the mastoid process have the most value in a diagnostic point of view. The hand must be well practised to recognise them easily, and they might readily be confounded with periostitis. This peculiar adenitis presents, however, a very small volume, the glands feel elastic, roll under the skin, are not painful, and never suppurate. In the obstruction of the posterior cervical glands, which certainly are of great value in diagnosis, it must be noticed that patients beyond forty are seldom affected with it; and that, in case it does not appear within twelve months after contagion, it never occurs at all. After a little time, alopecia comes on (*'Αλοπεκία*, the falling of the hair; *'Αλοπέχης*, fox). This symptom has been looked upon by some authors as a sign of inveterate syphilis, and by patients as an effect of mercury, at the time when this metal was invariably administered at the very outset of the primary symptoms; but you see that the latter were not quite correct, for mercury does not cause alopecia, but syphilis will. This symptom, as I before mentioned, is announced by a stiffness and dryness of the hair; it falls at the least touch, and adheres in great quantity to the patient's night-cap; but this falling off is gene-

ral all over the head, while common baldness is always partial at first, and attacks only the vertex. While all these symptoms exceed one another, certain changes take place in the circulation. The pulse loses its energy, and a *bruit de soufflet* is heard both in the cardiac region and about the carotids; in the latter, it may go so far as to stimulate the *bruit de diable*. These are evident signs of pretty advanced chloroso-anæmia. The globules are diminished in quantity, the skin and mucous membranes are shining and discolored; there is great debility, dilatation of the pupil, &c. Attention should be paid to this anæmic state, so as not to be tempted to commence the treatment by bleeding, as some practitioners do. This state of the blood explains many of the symptoms before enumerated. For the generality of observers there is not yet any sign of constitutional syphilis, yet if the disease goes on unchecked, certain manifestations come on, succeeding each other regularly in the different tissues of the economy, and leave no longer any doubt as to the nature of the affection. These are the strictly so-called secondary symptoms, and may occupy either the skin or mucous membrane, or even sometimes both of them at the same time."

—*Lancet*, vol. i., 1848, page 384.

DIAGNOSIS.—In forming a diagnosis on any supposed secondary symptom, the surgeon will, of course, never neglect to inquire into the *previous history* of the patient; this will aid him materially, but let it be remembered that, unless care be taken, it may tend equally to deceive him. It is not only necessary that a chancre has preceded, but that it should have occurred within a certain length of time, otherwise the relation between the cause and effect is not apparent. There are persons, who, when they find that chancre has ever existed, consider every morbid symptom during the life of the individual as due to that cause; we have above stated that this is not our opinion.

When we learn that no chancre, but only gonorrhœa, in the male or female, has preceded (provided other reasons indicate it), we may often suspect that chancres have escaped the patient's notice, daily experience demonstrating that chancre may exist in the urethra in the male, or in the vagina or neck of the uterus in the female, and yet only give notice of their presence by a slight discharge. Hence we must not rashly conclude, that although a chancre has existed the *symptoms* under which a patient is laboring are syphilitic or secondary; or when no primary symptom, but only a leucorrhœa has been observed, deny the symptoms which bear the mark of syphilis to be really specific, because they are not corroborated by the patient's antecedent history.

The surgeon should attempt to discover by interrogating his patient, whether the sores were indurated or not.* A knowledge, likewise, of the existence of suppurating bubo may be useful, for we have stated, in speaking of bubo, that the indurated chancre is rarely attended with suppurating swelling in the groins; and, lastly, it will be always well for the surgeon to examine minutely, if any

* M'Carthy says: "In 123 cases of secondary symptoms, indurated chancre had preceded the eruptions, and been recognised in the hospital, or the patient recollects having felt it, 118 times. In one case only the patient could recollect that a clap only had preceded the condylomata which we observed on the patient; but this clap was attended, he told us, with a bloody discharge, which occurred seven months previous to the patient's admission into the hospital.

"In four cases we were unable to obtain accurate recollections on the subject of induration.

"The examination of these 123 cases clearly proved to us, in consequence of the frequently unexpected situation of the primary sore, the reason why we daily meet with cases which give persons reason to suppose that secondary symptoms may arise spontaneously.

"In six cases the sore was situated in the urethra, where inoculation enabled us to recognise it three times; in the other cases, the disease, at first concealed from view, ultimately appeared as a urethral chancre at the meatus.

Four times at the anus. Once on the chin.	Once in the nostril. Once on the lip.
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"Suppose we take these 123 patients, and compare those primary symptoms for the purpose of attempting to discover some one character which appears sufficiently often to enable us to draw a deduction from it; we find that *in one and all* the inguinal glands have been observed enlarged, but suppuration took place only *twice*, and in these instances the buboes had a scrofulous appearance, and it was not possible by inoculation to obtain the specific pustule."—*Thesis*, Paris, 1844.

traces of indurated chancre or bubo exist at the time of investigation, and not rest satisfied with the denial of the patient. My readers will, I think, be glad to have the opinion of an authority like M. Ricord, who, in speaking of diagnosis, says : "One of the most important characters of secondary eruptions is a total absence of pruritis, whereas itching is a very frequent symptom of the other kinds of eruptions. When, however, the syphilitic rash includes naturally pruriginous regions, as the anus the genito-crural fold, the axilla, &c., there may be a good deal of itching, but the latter is then produced more by the irritative properties of the secretion, than by the eruption itself. Syphilitic eruptions, which you will bear in mind can never spring up spontaneously—viz., without the existence of a primary symptom, are not preceded by any febrile phenomena ; the eruption may be said to be apyretic, and indolent, involving in a very short time the whole body, and appearing in some degree, by successive instalments. They do not, as has been asserted, affect the face in preference to any other part, but they spread indiscriminately all over the frame. The smell which they have been supposed to emit is far from being a specific one ; in fact, there is none at all, except when the suppuration is very abundant, or when the eruption includes parts where it causes a muco-purulent secretion, as, for instance, mucous papules or patches do ; but I repeat it, there is nothing specific in the smell, nor in the copper color mentioned by Swediaur, nor the ham-like hue spoken of by Fallopius, which latter has been with reason looked upon as an important sign, and an absolute and constant character. In the secondary exanthematous eruptions, which generally come on in the earlier period, there is as much redness as with the common exanthemata, and no alteration in the cutaneous pigment is yet observable ; so that no reliance can be put on the color, and it often happens that men, accustomed to treat skin diseases, mistake simple or resinous eruptions for syphilitic exanthemata. At first the redness is a mere congestion, which readily disappears under the finger ; a little later, it becomes an actual stain, on which pressure produces no action. These purplish-brown stains are also met with in psoriasis, in lepra, and in other diseases ; but they generally are surrounded by a much darker areola in secondary syphilis than in any other affection. The seat of the cutaneous manifestation is not of much value as to the diagnosis ; for they may spring up anywhere, as well on the genital organs as in other places. In general, we find the earlier eruptions settle on the flexures of limbs, and the later ones on the exterior of the same ; this is particularly the case with the inferior extremities. You recollect, no doubt, that I mentioned before, that secondary symptoms stimulate sometimes a primary sore. Nothing, in fact, resembles more an indurated chancre than an ulcerated mucous tubercle, seated on the thickness of the skin or mucous membrane, particularly when it happens to be solitary, and to be placed on the generative organs. As to shape, you will find that secondary eruptions generally present rounded and well-defined patches, the color of which may in the centre be more or less deep. When the disease is of some standing, they will form distinct groups, which assume the annular or the crescentic form ; also that of the figure eight. When they take the shape of segments of a circle, they are more defined than in common eruptions. Secondary cutaneous manifestations have very little tendency to suppuration, unless the subject be constitutionally predisposed to pyrogeny, and when matter *does* form, it is generally small in quantity, and far from laudable in its nature. The eruptions which do not suppurate will in time disappear altogether, and thus terminate by resolution or desquamation. The scales in these cases are less brilliant, and thinner ; they dry more quickly, fall off more frequently in a furfuraceous form, than in non-specific affections, and the scales sometimes come off in large shell-like pieces. Syphilitic patches sometimes get covered with crusts of various dimensions, and of a dark greenish or blackish hue ; their surface is

cracked and broken, and generally thicker than in common eruptions. These crusts are sometimes so adherent, that they remain fixed on the spot, notwithstanding cicatization; they are, in some degree, grooved in the scar, and in some cases the crust is loosened, by gradually turning up at the margins, as the cicatrix is progressing from the circumference to the centre, and it finally falls off when cicatization is complete. In cachectic subjects there is much tendency to frequent haemorrhage.

"The crusts sometimes accumulate, layer after layer, and form distinct prominences, which constitute the affection known under the name of rupia. When, by the falling of the crust, the ulceration becomes apparent, it assumes generally a rounded form; its fundus is grayish and pultaceous; it is surrounded by a darkish areola; and there is a certain induration in the margins. The tendency to phagedæna is rare, but still it does sometimes happen that these ulcerations make great havoc, by extending very rapidly. Bear in mind that secondary syphilitic ulcers can not spring up spontaneously as it were; they are always preceded either by some eruption, as ecthyma, rupia, papules, or tubercles; such ulcers rarely follow vesicles or pyodracious pustules.

"The cicatrices left after secondary eruptions are very peculiar in one respect—viz., they may exist without any previous abrasion of surface; this is more especially the case in the papular and tuberculous forms. It seems that, in such cases, a plastic effusion takes place, and causes a certain hardness of the part; when this fibrinous secretion becomes absorbed, a regular cicatrix ensues, and may be looked upon as the result of a kind of atrophy or falling in of the textures, brought about by an obliteration of the vessels. In some cases, the tubercle assumes a fibrinous nature, and forms a prominent thickening, which consists principally of nodules. The secondary syphilitic cicatrices are in general round, of a purplish color, and arborescent; after a little time they turn whitish, and soon get depressed; they have, however, been seen on a level with the skin, and very rarely prominent. I must distinctly state that these cicatrices do not possess an unmistakable character, there is always a doubt in the matter; and it would be very presumptuous to risk a decided opinion as to their nature, particularly in a court of justice. The cicatrices which follow the pustules produced by frictions with tartar-emetic—those of ordinary rupia and ecthyma, as well as those resulting from burns—have a great resemblance to the cicatrices caused by secondary syphilitic ulcerations; so that you see how wary we should be when a decided opinion is required. Now, to sum up, it is evident that we can not rely on any absolute, well-defined character which might assist us in distinguishing venereal eruptions from ordinary ones. We must, then, take advantage of all the circumstances of the case, the antecedents, &c.; and if I were to give the preference to some characters above others, I would say that the absence of pruritus is of much weight, for this hardly ever occurs in syphilis, and it may be looked upon as the essence of common eruptions; next to pruritus, I would place the copper color; but this peculiar hue of the cutaneous phenomena is liable to lead us into error, for ephelis and pityriasis present almost the same tint."—*Lancet, loc. cit.*, p. 438.

We must, I think, conclude, that the diagnosis then of secondary symptoms is by no means so easy as some have supposed. I might have cited many authorities, but I am content to add that of Hunter, who says, page 466 (Palmer's edition): "There is hardly any disorder that has more diseases resembling it in all its different forms than the venereal disease. For probably the venereal can hardly be demonstrated in any case, especially in the form of *lues venerea*, from its not having the power of contamination."

"The symptoms produced from the inspection, when in the constitution, are such as are common to many other diseases, viz. blotches on the skin are common to what is called scorbutic habits, pains common to rheumatism, swellings

of the bones, posterior saucers, and to many bad habits, perhaps of the scrofulous and rheumatic kind.

" As errors in forming a judgment of a disease lead to errors in the cure, it becomes almost of as much consequence to avoid a mistake in the one as in the other ; for it is nearly as dangerous in many constitutions to give mercury when the disease is not venereal, as to omit it in those which are."—*Hunter's Works*, page 470.

PROGNOSIS.—When we see an otherwise healthy individual, soon after the occurrence of secondary symptoms, which may have broken out a few weeks succeeding the cure of chancre by simple local means, we may usually promise him speedy relief, provided he will, for a short time, take those precautions which we shall hereafter recommend. We may truly say that there are few affections which get well so rapidly, and yet which, when left to themselves, produce such serious consequences. But too often our prognosis is not of this cheering nature ; the individual we have to treat is a debauched character, his constitution is impaired by previous excesses, or some disease foreign to syphilis ; he consults us at the latter stages, when the complaint has already existed many months, or when it has followed the injudicious use of mercury for primary sores, so that the system is impaired, the bowels disordered, and there is a distaste for the further employment of the mineral. Lastly, when the patient will not submit to any fixed plans of treatment, but is determined to pursue his pleasures ; when he exposes himself to cold, and commits all kinds of excesses, then must our prognosis be unfavorable.

In saying, however, that we may usually promise our patient speedy relief, let not the surgeon or patient delude himself with the idea that a permanent cure is effected in all cases, or be surprised if relapses occur. In considering the future, and the probability of relapses of secondary symptoms, the surgeon should view the complaint as simply a local manifestation of the general contamination of the system, the natural course of which is gradually to wear itself out, provided simple care be taken to avoid those aggravating causes of disease which are known to increase its virulence. Should, however, the health be impaired, or the constitution ruined, or should the climate be unfavorable, this animal poison, under these circumstances, will, instead of being a mild complaint, easily amenable to treatment, assume a form, even in the present day, quite as severe as those epidemics described on the introduction of syphilis into Europe ; the only difference being, that these attacks are now combated with proper remedies ; formerly, surgeons mistreated them. Syphilis, then, only shares the fate of many other diseases which depend upon animal poisons introduced into the human system, and the indications of their treatment consist in avoidance of the cause, combating the symptoms as they arise, and not interfering with the powers of nature, but following in her wake, and enabling the constitution to throw off the poison and allay the irritation it creates.

I would ask if all our successful methods of treating animal poisons do not resolve themselves into this : is it not by sanatory regulations we have got rid of scurvy, hospital gangrene, plague, and the fearful ravages of smallpox ? Is it not to our improved methods of treatment in checking inflammation at the moment it attacks vital organs, and supporting the system generally by various means, that we see our endeavors now crowned with success ? whereas our predecessors failed in checking these plagues when they occurred. We must recollect, that our endeavors are not turned to arrest at once the influence of the animal poison ; in some of these complaints this specific poison will only act once on the system, but for this immunity we suffer severely ; other poisons are characterized by a liability to return, and syphilis is well known to be followed by repeated relapses. Read the accounts of Fernel and Fracastor,

Ricord,* or Brodie; all agree in this one fact—namely, that relapses repeatedly occurred at the time when a man was salivated, and kept spitting one or two pints per diem for three weeks,† or at a more recent period when no mercury was given; relapses are acknowledged under both treatments. We may lay it down as a fundamental law of this animal poison, that no known medicine will absolutely prevent recurrence of secondary symptoms, but let us hope for the discovery of some other mild animal poison, which when introduced, like the vaccine virus, into the system, may prevent or modify this most severe scourge. Look at all modern remedies for syphilis: their advocates bring them forward as curing the disease, but the cases detailed only prove that relapses are less common under some than under others; unfortunately for science, all have not the candor of Brodie,|| who acknowledges the inefficacy of our means of curing syphilis: to believe some authors' statements, success with mercury, or iodide of potassium, is invariable, certain, and infallible, and these observations apply to no one school. Allopathists, water-doctors, and galvanists, all conceal the fact of the number of relapses following their special treatment. In the absence of correct data, how can we place dependence on statistics? it is not enough to know that secondary symptoms disappear; what we wish to learn is, the probability or improbability of their return. These are points on which much information is still required. Mercury is acknowledged to cure secondary symptoms quicker than any other remedy, and it may likewise be said to prevent relapses more frequently, but it must at the same time be admitted, that relapses will occur, in spite of its administration, however largely given or long continued. In fine, we may always assure our patient that he will be relieved of his secondary symptoms in a few weeks, but he must not be astonished at seeing them recur, notwithstanding all the means we can employ. The action of the remedy is ephemeral in such cases. This is not the fault of the medicine, nor implies ignorance of the surgeon, but depends on the natural effects of syphilis in certain constitutions, a subject it would be well for some of the staunch supporters of the indiscriminate use of mercury to study in the writings of the army surgeons, to whom we are indebted for much valuable information on the natural history of the complaint.

* "The prognosis of secondary disease should be exceedingly reserved and guarded, inasmuch as the practitioner can hardly ever calculate upon a complete and lasting cure. The symptoms disappear, but relapse is a common rule."

"So frequent is relapse in syphilis, that it may be fairly questioned whether the syphilitic diathesis, if once established, can ever afterward be completely eradicated."—*Ricord's Lectures, Provincial Journal*, vol. vii., p. 444.

† Brodie acknowledges the frequency of relapses, but attributes them to insufficient doses of mercury, given internally, in broken down constitutions. "You may often patch up the disease by giving mercury internally; but it will return again and again, and you may cure it at last by a good course of mercurial ointment." . . . "You must exhibit it until the sore has healed, and for some time afterward; and the same plan must be pursued with reference to the secondary symptoms, or they will return." . . . "If after the disease appears to be eradicated, the health is broken down, the disease may return at a considerable distance of time." . . . "A gentleman had secondary symptoms, and I put him through a course of mercurial inunction for ten weeks. He was confined to the house and most carefully attended to, and took mercury for some weeks after the eruption had disappeared. He seemed to be quite well, and went abroad, and continued so; but at the end of a year, being in Lisbon, he went out, got his clothes wet, and took cold. This was followed by a severe attack of erysipelas, and a Portuguese doctor very indiscreetly bled him to a large extent, and an enormous abscess formed. His health became completely broken down, and he had now a return of the venereal disease, the symptoms being worse than they were before. When his health had improved, a surgeon in Lisbon put him under another course of mercury, and cured him."—*Brodie's Clinical Lecture, Lancet*, vol. i., 1843-'44, pp. 676, 678.

Hennen relates a case of secondary symptoms, in which he says: "We had a remarkable illustration of the fact that they occur after a well-regulated course of mercury, illustrating Mr. Hunter's doctrine, that 'if the disposition of the disease is formed, mercury can not cure it until it comes into action,' which, in plain language, as Mr. Guthrie has well expressed, means nothing more than that the disease can not be prevented, in certain constitutions, from running its own course, when it may, at last, be cured."—*Hennen's Military Surgery*, p. 529.

‡ "Le bon dégré doit être d'une ou deux pinte de salive par vingt-quatre heures. L'évacuation doit être soutenue dans cette force pendant dix-huit ou vingt jours."—*Gantier Dagoty*. Paris, fol. 1773, page 15. || Lecture on Syphilis in *Lancet*, Feb. 17th, 1844, pages 675 and 678.

To those anxious to learn any further particulars on this subject, I would refer them to pages 285, and 315, on the prognosis of induration and bubo.

I can not, however, close these observations on the prognosis of secondary symptoms without drawing the attention of my readers to the opinion of M. Ricord on the subject. He says: "These symptoms are, on the whole, far from being very serious, for they are easily and rapidly curable; but if not very dangerous in themselves, they are very unpleasant, and when we consider that the cause which produces them is indestructible, the prognosis assumes a certain degree of gravity in so far as the future is concerned. We can, of course, control the eruption and the ensuing ulcerations, but we are powerless as regards the diathesis, and the primary infection which has produced them. The opinion which I hold with regard to the persistence of the diathesis when once fairly established, is no doubt very far from advantageous to myself, as bearing upon worldly interests; but I have hitherto found no reason to change it; and to support opposite views is to give the public very erroneous notions of our science. No doubt it would be more gratifying for both the medical man and his patient, if the former could promise a radical cure by means of the therapeutic agents he employs; but when this kind of deception is indulged in, it comes to pass that patients neglect the manifestations which *must* come sooner or later, they being lulled into a dangerous ignorance and security by the assurance that they are all right as to the future; and many an organ has been destroyed in this way, as medical aid is not sought in time. When I dismiss my patients, I always tell them that they stand under the influence of a syphilitic diathesis, and I recommend them to apply to a medical man *immediately* they perceive anything wrong about their health. I harbor the firm belief, that neither the duration of treatment nor its early application will protect from the diathesis; for I have seen patients who, after an anti-syphilitic course, have remained perfectly well for ten, twenty, thirty,—ay, even forty years, when, after such a long time, they experienced attacks of an unmistakable nature. Notice carefully that these were not eruptions, sore-throat, &c., which are all early symptoms, but tubercles, osseous affections, splanchnic diseases, &c. Many of these patients had been treated by such men as Cullerier, Alibert, Biett, Dupuytren, &c. Divers preparations of mercury and of gold have been used to eradicate the disease, but they have failed in destroying the diathesis; and when this latter has been supposed to be overcome, it was because no distinction had yet been made between the indurated and the ordinary chancre. Of course, I need not repeat that the latter is comparatively harmless as to secondary symptoms. The prognosis as regards these symptoms is also much influenced by the age of the patient; it is, in general, very serious with young children hereditarily affected, and likewise with pregnant women.

"Scrofula, phthisis, scurvy, the herpetic venom, a chlorotic state, are, one and all, very untoward complications; they are, in fact, additional enemies, which the medication must combat. As to hygienic circumstances, you will, of course, understand at once that cold weather, dampness, sudden variations of temperature, excesses, debauchery, &c., render the prognosis very unfavorable. The appearance of a renewed set of symptoms where a mercurial treatment had been gone through for similar eruptions, is of a very bad omen: first, on account of the relapse; and, secondly, because mercury has so impoverishing an influence on the blood.

"I would direct your attention to the fact that the earlier manifestations are always less serious than the subsequent ones; and that the further we proceed along the links of secondary accidents, the more serious the prognosis becomes. But still, when the transitory symptoms come on, they need not be looked upon with very great anxiety, except where no means have been used to arrest them. Iodide of potassium is all-powerful in controlling these affections, and

in a very short time too. The particular seat of any syphilitic manifestation may add somewhat to the gravity of the case, particularly as refers to the tertiary forms, and it often happens that they leave after them indelible marks, and great deformity. Important functions may be either altered or entirely abolished by the destruction of certain organs: thus patients may get afflicted with deafness, dysphonia, aphonia, difficulty of deglutition, of pronunciation, &c. I need not insist any longer upon the prognosis of secondary symptoms: you see that they are powerfully influenced by a great variety of circumstances."—*Lancet*, vol. i., 1848; p. 493.

TREATMENT.—I need scarcely, I think, at this stage, call the attention of the reader to the importance of treatment. All that has preceded is but, as it were, introductory and explanatory of the modern views, bearing on points which must be fully understood before we can do justice to our patients; and I hope for the indulgence of my readers if I enter into full details on the subject.

History.—In bygone days, when every symptom, primary or secondary, syphilitic or pseudo-syphilitic, was indiscriminately treated with mercury, the duty of the surgeon must have been very simple. Frictions, or corrosive sub-limate taken in large or small doses, and continued for a period varying with the views of the day, were the panaceas for these complaints. If relapses took place, the cause was said to be self-evident—enough of mercury had not been given; and the best practitioner was he who poured in the mineral to the greatest extent!

The non-mercurial school followed, who counted by thousands the cures they performed by the "total-abstinence system." Their investigations were principally confined to soldiers, who are examined frequently, and in whom primary symptoms are detected early, and treated effectually, in hospitals which are well ventilated and of uniform temperature; but in civil life the same success is not found to attend the non-mercurial treatment. Sir B. Brodie, in "*The Lancet*" (February 17, 1844), states: "Sir W. Wynepress, who was surgeon-major to the Coldstream Guards, but has now retired from service, saw a great deal of syphilitic practice, and he told me that he could manage the cases of privates without mercury, but not those of officers. When Mr. Rose entered into private practice, he thought that he could apply the same rule there which he had carried out among the soldiers, but he found that he could not, and was compelled, like the surgeons, to give mercury. In cases where he endeavored to avoid its exhibition, he found that he was continually beset with difficulties." When we find these admissions made by such men as Mr. Rose, we may well be excused from dwelling at great length on the non-mercurial treatment, in a paper professing to recommend the improved modes of treatment in private practice.

I have seen much of this non-mercurial treatment. At page 288, a case is cited in which the ill effects are evident; still, to this school, and to the army-surgeons of this country in particular, we must render due justice, for having first called the attention of the profession to the possibility of treating syphilis, primary and secondary, without mercury. But, in admitting this, we must likewise state that the non-mercurial schools have been led into exaggeration; that they are unable to maintain what they advanced: still science is much indebted to them, and this same exaggeration has been perhaps of great use. Did Mr. Rose now live, he would perhaps allow that he purposely exaggerated the employment of simple means.

This school pointed out most strongly and too correctly the consequences of giving mercury indiscriminately; it showed that all sores would get well without a grain of the mineral. So far they were correct, and subsequent experience has substantiated their opinions; but not condescending to carry their investigation further, nor pointing out what forms of primary sores or secondary

symptoms were rebellious to the treatment, they failed to convince the profession; for practitioners, in the absence of any stated rules, abstained indiscriminately from mercury: the results were, of course, unsatisfactory, as mentioned above by Brodie, and the entire fabric ran great risks, because the whole truth was not told. This school must have known, that, under the non-mercurial plan, an induration would remain as such for months—that spots on the body will occasionally do the same, when no mercury is given—that affection of the eye will come on, as well as other complications, which in civil practice no surgeon should dare to risk. I say this must have been known, for we can not imagine such shrewd observers, with patients almost always under their notice, should be ignorant of the fact. Then why not notice it? Why not tell the whole truth, and investigate the cases which did produce these results, and distinguish them from those more numerous ones which get well under simple means?

Within the last few years, public attention has been called to the preparations of iodine: these have been vaunted above measure by some, and considered valueless by others, in the treatment of secondary symptoms. In quoting a few authorities only, my readers will judge of the difference of opinion on its use. 'The late and much-lamented Dr. Williams, in his "Elements of Medicine," vol. ii., page 165, in comparing this new mode of treatment with that by mercury, comes to the conclusion that "iodide of potassium must be considered as infinitely superior to mercury in the cure of this once-formidable disease." Sir B. Brodie, in "The Lancet," volume i., 1844, page 678, says: "It is now very much the custom to administer the latter [iodide of potassium] in cases of syphilis. No doubt it is an excellent remedy in some cases, and it comes in to your aid when you have reasons for not giving mercury; but if you ask me whether you can rely upon iodide of potassium as well as upon mercury, I say, 'No.' You may remove slight symptoms, by giving it for a time, and severe symptoms, by exhibiting larger doses; but in the latter case, so far as I have seen, it does not make a permanent cure, for the symptoms return again. As a prophylactic, it is not to be compared with mercury."—(See note, page 374.)

"I have demonstrated, in the most positive manner, that the iodide of potassium is a remedy which can not at all be depended upon in the treatment of secondary symptoms; indeed, it seldom succeeds in dissipating them; it nearly always fails, and is as weak as mercury is strong."—*Ricord's Lectures, in the Lancet*, vol. i., 1846; p. 65.

In the year 1846 I published an article in "The Lancet," on the employment of iodide of potassium, in which I attempted to lay down more accurate rules for the treatment of secondary symptoms. Subsequent experience, however, as will be soon seen, has caused me to modify, in a slight degree, those opinions, as I found that my own opinions, like those of Sir B. Brodie, Dr. Williams, and Ricord, offered too many exceptional cases; but in the present chapter I shall state the results of my present experience, based as it is on notes of all the cases that have come under my care in private practice, and which, in the majority of cases, a surgeon has the opportunity of watching for a series of years; for, as must be apparent to most of my readers, it is not sufficient for a practitioner to see his patients occasionally during the next few months only. To arrive at any accurate information, he should have his eye on the cases for a series of years, a thing impossible among hospital-patients.

Preventive Treatment.—Enough has been stated in preceding pages, I think, to show the severity of the prognosis of secondary symptoms. Hence it follows that we should attempt, by all the means in our power, to prevent or destroy the chancre, the primary cause, as speedily as possible. The importance, then, of early treatment, for the primary sore, is at once apparent, and the *abor-*

tive treatment is the one which should be employed in the manner recommended at page 260: let prevention of secondary symptoms be the rule, as we never can be absolutely certain that we have destroyed the syphilitic diathesis when once established. Should, however, all these means of prevention fail, or if we are consulted when secondary symptoms have already appeared, it will be well to direct our attention to the treatment of the complaint. In these cases, the first duty of the medical man is to remove, as far as lies in his power, all the predisposing causes, or all such as may keep up or be likely to aggravate the disease. The consideration of the predisposing causes will much assist us in the treatment. Among other things, let the body be protected from changes of temperature by flannel, let the general powers of the system be supported by good diet, let the surgeon be careful how he reduces his patient by bleeding for any complication which may occur—in fact, all depressing agents should be expressly provided against; and in place of these, let tonics or baths be prescribed, and a somewhat generous mode of living be enjoined, as now recommended for the prevention of cholera. Similar attention should be paid to the complications, which must be treated on general principles; in fact, let secondary symptoms be reduced to their *simpler expression*, as the French say. Had this principle been always kept in view, we feel assured that humanity would have had cause to rejoice. Should any severe complications exist, let the original disease be lost sight of for the moment: there is no hurry to treat it, more especially when other and more urgent symptoms exist; but, above all things, let us caution our readers against believing that at this stage a specific treatment is required; unfortunately, syphilitic patients have been too often treated on exceptional principles, and the non-observance of the ordinary rules of medicine have led to the worst consequences.

Before commencing the treatment of secondary symptoms, let the young surgeon recollect what has been said under the head of Prognosis. The study of that chapter will teach him that his object should be the *modification and mitigation of the symptoms rather than the complete eradication of the diathesis*. In speaking of the diathesis, I have repeatedly stated that it can be prevented only by the destruction of the chancre within the first five days. When this period is passed, we are never sure of preventing the general infection, and Hunter was mistaken when he thought he could arrest the chain of secondary accidents by his anti-syphilitic treatment.—*Ricord, Lancet, volume i., 1848; page 517.*

Bearing this in mind, then, let not the surgeon do too much at first; let him husband the vital powers of his patients, and treat complications as they arise. The first indication I follow is to obtain the free action of the skin; this I do by prescribing warm or vapor baths once or twice a week, taking care that the patient is not exposed to cold immediately after. Attention should be paid to the state of the bowels, and gentle purgatives may be occasionally given. I prefer the pil. rhei c. in sufficient doses to produce a gentle aperient effect.

MERCURY.—Without absolutely affirming that sarsaparilla, iodide of potassium, or other remedies, will not cure the affection, I may state they have so often disappointed me, that I seldom now recommend them, but at once have recourse to mercury, as being the remedy most simple and certainly efficacious.

In thus speaking of mercury, my opinions by no means stand alone; others, who generally are considered anti-mercurialists, have experienced the same difficulties in treating various forms of secondary symptoms without mercury. Thus Hennen, who treated so many cases without mercury, says, in his "Military Surgery," page 526: "The cutaneous eruptions I would treat at first on the same general principles, but I should not very long postpone the employment of the mildest mercurial alteratives, aided by warm bathing and sudorifics." At page 524: "I entertain no doubt of the utility of mercury,

when properly employed as an auxiliary in the treatment of venereal complaints when they become chronic."

Carmichael, who was one of the first to treat syphilis without mercury, gives the following reasons for administering it : " That form of disease which is characterized by the scaly eruptions psoriasis and lepra, yields with certainty and rapidity to the exhibition—a proposition which can not be advanced respecting the other forms of venereal disease."—*Carmichael's Clinical Lectures*, p. 14.

In simple uncomplicated cases, I am not aware of any necessity for a preparatory course of purgatives, alteratives, or diaphoretics, vaunted by some surgeons. The judicious practitioner in the present day had better turn his attention to the indications for employing the well-known remedy, than seeking out new ones. In cases presenting any complications, our attention should be directed to them before commencing mercury ; if scrofula or phthisis be imminent, mercury may hasten their development : still the surgeon should consider if the effects of mercury or of syphilis be most to be dreaded, and treat the one or the other according to circumstances. Happily, in the present day, these instances in which counter indications against mercury are present become less and less frequent, as they bear iodine very well ; and these are just the cases which improve the most under its use. Thus we avoid mercury when it is likely to be most objectionable, but even in these cases I should not hesitate to give mercury if I thought it required, and if iodide of potassium had previously failed.

Brodie has the following pertinent observations on the subject :—

" First of all there are persons of a certain delicate constitution, of a scrofulous disposition, and who are disposed to phthisis. You would not give mercury to a man of this kind until you were quite sure that it was absolutely essential ; nevertheless, there are persons of a scrofulous tendency who are best treated by this means. If mercury be an evil, syphilis is a still greater one. In scrofulous persons, local diseases are especially developed after the system has been affected by a morbid poison. If they are disposed to phthisis, they will have tubercles in the lungs after scarlatina, measles, and small-pox, and it is just the same after syphilis. You find enlargement of the glands of the neck take place whenever the system is disturbed by the syphilitic virus, and here mercury is not to be exhibited unless you are sure that it is wanted. But if there be syphilis, it is better to give it than let the disease take its course : it must, however, be administered with great caution, in moderate doses, and the patient carefully watched all the time."—*Brodie's Clinical Lectures, in the Lancet*, vol. i., 1844 ; p. 674.

I should have no hesitation, under similar circumstances, in giving mercury to pregnant women and children ; but these special cases will be fully considered under the head of Syphilis in Children. It would be but a useless repetition did I here dwell upon the best mode of administering mercury—its doses, consequences, or results. These have been so fully detailed under the head of Mercurial Treatment of Indurated Chancre, that to that chapter I must refer my readers, where they will, I think, find the fullest details that have ever been published on the subject, and in consequence will, I hope, be enabled to meet every emergency that can arise.

If I am asked how long mercury should be continued in cases of secondary symptoms, I acknowledge my answer would be very unsatisfactory. I believe that we should continue mercury a month or six weeks ; even three months may be required, during which the mouth may be kept slightly affected, provided the health allows us to continue it so long, and no untoward accident happens. The instances of failure depend, in the present day, upon practitioners giving their patients too powerful doses of mercury, salivating them

too rapidly, and suspending the mineral too readily ; a relapse occurs, and the same results follow, until the surgeon who may be last consulted is unable to say if mercury, cachexia (as the army-surgeons call it), or syphilis, is first to be treated.

Having discussed the effect of mercury upon the constitution and system, and described how far the mineral should be pushed, it remains for me now to speak of its influence in removing the present symptoms, for which it may have been given, and its power in preventing relapses. The most experienced surgeon is himself often surprised at the almost marvellous rapidity with which symptoms disappear when mercury is properly given. A patient has been getting better and then worse under other treatment ; he takes a few doses of the mineral, and his skin, before of an earthy, unhealthy color, becomes clear, the eye resumes its brilliancy, the spots vanish, and the stains alone remain, in very old-standing cases : the powers of the system rally, and the patient resumes his usual occupation with a vigor which he has been unused to for many a week. Cases, however, that are unsuited for mercury, instead of progressing thus favorably, take on a very different train of symptoms. Lassitude, dyspepsia, and a chlorotic condition, set in ; the spots, instead of amending, begin to discharge ; scabs form, which, on being removed, expose ulcers, circular in shape, with deficiency of or presenting only a few flabby granulations, attended with a serous or reddish offensive ichor : pain and restlessness attend the nights of these subjects, and the gums bleed on the slightest touch. We can not say this is salivation, although many of the symptoms are present ; but we have a cachectic state which proceeds from bad to worse. Did the Abernethian school call these varied and Protean complaints "*the diseases resembling syphilis*" ? It is difficult, from the writings of that surgeon, to decide exactly what he may have meant by the term ; but I am induced to believe that one form of that vague denomination consisted in the cases we are now discussing.

I still meet with cases treated by some of that surgeon's former pupils, presenting anomalies truly unusual. I have lately had one such under my care. A female, the mother of several children, presented herself with three circular sores of the size of a shilling on one leg, and five similar ones on the other lower extremity ; they presented a foul surface covered with sloughs. She stated that a similar sore had existed on the sternum ; her mouth bore traces of salivation which had nearly passed away, and left the gums spongy, the teeth loose and covered with tartar, and her whole system such as you might expect in scorbutic disease. If I might believe my patient, she had never had primary disease, or the usual secondary symptoms ; but her surgeon (a disciple of the Abernethian school) had given her large and repeated doses of mercury, and used black wash for six weeks. Instead of recovering, she had been getting progressively worse, and applied to me, as the gentleman said she had not taken mercury enough, and was about to increase the dose. This is one of the many cases I witness in London even in the present day, and I believe them peculiar to the English capital.

Will *your* treatment prevent relapses ? is a question I have often been asked by both practitioners and patients. To one and the other I must candidly say, no ; but in by far the majority of cases, secondary symptoms will not recur. I believe that no treatment can guaranty the system ; and experience has proved that moderate courses of mercury succeed more frequently than any other. I have already shown, in speaking on prognosis, that however long, or largely given, mercury will not, and can not, prevent relapses. I have likewise collected the opinions of former absolute anti-mercurialists to show that secondary symptoms do not disappear ; or, if they do, readily reappear when no mercury is given. I have attempted to prove that mercury given in appropriate doses in the present day does no harm. I have shown, I think, that if long continued,

and in large doses, it produces much mischief. Is it not safest, then, to steer the middle course, to reject equally that plan which avowedly, by the confessions of its staunchest supporters, can not cure the disease, as well as the opposite one, by which you destroy your patient's constitution by the large and long-continued course of the mineral. Insidiously, as I have shown, the disease creeps over the system; by equally slow and sure means should we employ the remedy. I am convinced, that however beneficial a rapid salivation may be in iritis, it is very objectionable in other secondary symptoms; it leaps over the disease; it depresses the powers of the constitution, but fails in eradicating the complaint; and I almost question if the old humoral pathologists were not right in believing that Nature attempts to throw off the disease; and that we are called upon only to assist her, by slowly, but continually, exciting the different emunctories. The plan above recommended, if it does not profess to prevent relapses in every case, avoids those dreadful consequences so often met with in the practice of the mercurial school, and though, like its members, we see secondary symptoms recurring, they are of a very mild description, and soon yield to trifling remedies. We labor at first under one disadvantage—namely, if, under our treatment, relapses occur, they do so in a short time, and mildly, whereas, after severe courses of the mineral, many months, or a year, may elapse before secondary symptoms show themselves; but their severity makes the patient pay dearly for the immunity, by a longer period of imperfect health. If the surgeon should still object that the treatment here recommended is attended with ill consequences, can he say that the more severe and bolder practice is not fraught with danger? or can he deny that the anti-mercurial school has failed in proving, that in this country, or in private practice, their treatment has succeeded?

The question of relapses I consider so important, that I can not dismiss it without some additional remarks. Having shown that surgeons who give mercury, as well as those who abstain from its employment, acknowledge that relapses do occur, though in different proportions, I come to consider if the preparation is the cause? To believe some writers, relapses in their practice do not occur; others would lead you to infer it from the silence they maintain on the subject; others, again, allude to the few and slight cases, and they attribute this immunity to the preparation they employ. In a former page I quoted a passage from Sir B. Brodie, in which he goes so far as to say that, "except in the very slightest cases, you really can not depend upon any mercurial treatment effecting a cure, or even giving a good chance of it, by any other means than inunction." This, coming from such a source, is the more extraordinary, as Sir B. Brodie must see cases every day where mercury, given internally, relieves effectually in many cases, and in other instances cures, secondary symptoms; and if we go no further than the able lecture given by Sir Benjamin himself, we have evidence that inunction will not prevent their occurrence. Let the reader turn to Abernethy's case, page 273—let him look back to the cases cited in former pages, and he will find satisfactory evidence (even if he has not often witnessed cases) that no treatment, however long continued, with inunction will guaranty the patient from a relapse of the disease in certain constitutions. It will be no answer to the plan I have recommended in the course of these and former pages to say, that had I used various other preparations, relapses would not have occurred. I could give extracts from nearly all writers to show that they do occur; and I have elsewhere shown that a relapse is a natural consequence of syphilis in certain constitutions, do what you will in our northern climates; but I can easily understand, and have occasional evidence of, the effect of climate, food, and temperature, in producing secondary symptoms; and because relapses are not frequent in the south, it does not follow they are present in the north, because there we give mercury. The day

is, however, passed for the discussion of the non-mercurial doctrines : the surgeon now considers how he may give the mineral with the greatest economy of the constitutional powers, and yet with the most probable means of guarantying the system from relapse. It is upon these two points that I have wished particularly to dwell, believing them to be of paramount importance ; and if, in doing so, I have fatigued the attention of my readers, I must plead the importance of the subject.

In our definition we stated that the term secondary symptoms was employed to designate the morbid phenomena which appear on the skin, mucous membrane, eye, testicle, &c. Let us now direct our readers' attention to each separately.

The researches of modern anatomists have proved beyond a doubt, that there exists a great analogy between the skin and the mucous membrane. Physiologists have likewise established analogy of function between them, and modern surgeons, in a variety of their rhinoplastic operations, have proved on the human body, what was long known to the comparative anatomist, that skin may be, as it were, transformed into mucous membrane, and mucous membrane assume many of the characters of skin. Pathology daily shows that the influence of disease on the skin reacts on the mucous membrane, as in cases of burns ; on the contrary, that irritation of the mucous membrane reacts on the skin, as in eruptions following the use of copaiba, &c. In fevers, particularly in typhus, the co-existence of the rosy eruption, or of petechiae, together with the lesions of the mucous membrane, have not escaped notice ; and in small-pox it is now well known that the pustules may appear on the mucous membrane, as well as on the skin. This analogy, then, between the diseases of the skin and mucous membrane is in no case more strongly marked than in secondary symptoms ; the eruptions may be traced on the penis and on the prepuce, gradually passing one into the other ; on the mouth we have often witnessed this transformation.

SECTION II.

SECONDARY SYMPTOMS OF THE SKIN.

THE syphilitic affections of the skin are very varied and numerous, yet, by following the classification of our countrymen Willan and Bateman, we trust we shall give such a succinct description of them, as will enable our readers readily to distinguish these specific diseases from such as depend upon other causes.

Various as they are, they may all be reduced to one of the following forms :—

- Exanthematous affections.
- Vesicular affections.
- Papular affections.
- Tubercular affections.
- Pustular affections.
- Ulcers.

By far the most common and earliest in appearance are—

EXANTHEMATA.

During the existence of the primary symptoms, or some few weeks after their disappearance, and generally in consequence of exposure to some of the predisposing causes mentioned above, the patient is surprised at observing a larger or smaller portion of the body covered with an exanthematous eruption,

which sometimes assumes the form of measles (so general is the affection of the skin); at other times, distinct patches appear, of a more or less circular form. At their commencement these eruptions are of a rosy color; the surrounding skin is of an unhealthy appearance, of a dusky yellowish hue; on pressure the spots disappear, but return immediately.

The whole surface may be covered at once, or successively: this exanthematous eruption may pervade the abdomen, lower extremities, arms, face, and back. It may disappear from one part and shift to another, or reappear again on the same portions of the body in a few days. These spots, however, soon lose their rosy color, and daily become more and more dusky, until they assume a coppery hue, which is always best marked in the most dependent parts of the body; it seems to arise from something more than simple congestion, as pressure does not remove it.

Ricord adds: "This erythematous eruption is generally apyretic, without local heat or itching; but there may, however, be fever, independently of syphilis, and it must then be looked upon as a concomitant phenomenon; the patient may even have bronchitis or coryza upon him at the time, and these would be sufficient to give rise to some feverishness. I insist upon these circumstances, for such secondary eruptions might, by an inexperienced hand, be mistaken for measles or scarlatina. Feverish symptoms are very rare in constitutional syphilis, but I must say I have observed them now and then. The cutaneous phenomena appear sometimes suddenly; at other times they come on gradually, and take two or three weeks in coming out. This duration is quite uncertain—a circumstance in which they differ widely from the regular exanthemata, which last, as you know, a definite and fixed period of time."

"When the exanthematous eruption has appeared, it will go on for more or less time, but it then presents certain undulations,—it is observed to fade away for a little while, then it reappears, and it may thus go on with interruptions for two, six, or twelve months; but after a year or two it entirely dies away. In half the cases the eruption remains quite unnoticed, and it very often fades away without the patient being aware that it ever had any existence; but some time after—say a year—another and deeper eruption makes its appearance, and here you must be careful not to take this for the first manifestation, for you would then fall into the error of believing that you had to do with a tertiary system, the secondary having been absent altogether."—*Lancet, loc. cit.*

DIAGNOSIS.—I would direct the reader's attention to the frequency with which a form of nettle-rash, the result of taking copaiba, is mistaken for this form of secondary symptoms, and hence gonorrhœa has often been said to occasion secondary symptoms. The diagnosis is generally easy. *Thus, in the roseola depending upon copaiba, the symptoms subside as soon as the medicine is left off; great itching attends it; desquamation of the skin, absence of indurated chancre or bubo, and the presence of enlarged cervical glands, further assists the diagnosis.*

In syphilitic exanthemata we find no fever, no itching. The disease does not rapidly disappear; there is indurated chancre, buboes, and enlarged cervical glands.

There is an affection of the skin which is not unfrequently mistaken for syphilis, and which authors call *pityriasis*; I will describe an instance which has lately come under my care. A remarkably well-grown young man was sent to me by a London physician, under the idea that his patient was suffering from secondary symptoms, and before commencing a mercurial course he wished to have my opinion on the case. The patient told me that he had frequently exposed himself to the chances of infection, and had suffered within a twelve-month from chancre, which had been cured without mercury. Some months previously to consulting me, he had observed the appearances he now com-

plained of, but which had gradually increased, so as to cause him much alarm. On stripping he showed me his chest and abdomen, covered with large patches of copper-colored stains; on some parts the minutest scales could be observed, unaccompanied by any elevation; but on other portions this complaint consisted in simple discoloration, resembling that of boiled ham. All other parts of the body were free from disease, and the general health was excellent. I at once wrote to his medical attendant, to say that the disease was not venereal, but a well-marked instance of pityriasis versicolor, and recommended a local application, consisting of two grains of corrosive sublimate to one ounce of rose-water, to be applied once or twice a day. The patient called on me soon after, to say that the affection had completely disappeared, but the application caused some irritation of the skin, and a few pimples of a rosy color were visible. I recommended the lotion to be left off, and the patient, whom I have since seen, is quite well.

I could cite other cases, but this one is a good specimen of the kind one sees in practice. I am far from the first that has called the attention of the profession to these instances. Bateman says: "Great uneasiness, however, is often occasioned by its appearance, since its brown and almost coppery hue frequently suggests, even to medical practitioners, the idea of a syphilitic symptom." Dermatologists have not, however, shown us how to distinguish the two affections; as in this case the history or color affords no clue; but in my own practice I have always placed the greatest dependence upon the absence of condylomata, psoriasis palmaris, and sore throat; when these are absent, and the patient in good health, you may be sure that you have to treat a simple case of pityriasis versicolor, a complaint which is very harmless.

TREATMENT.—The *general* plan of treatment has been already sufficiently alluded to; the *local* treatment may be of the simplest kind, consisting of warm baths taken every other day, and the patient should remain in the bath for twenty minutes. I have seen much relief experienced by taking gelatine baths; or the water may be made very soft and agreeable to the surface by boiling two quarts of bran in a gallon of water for half an hour, then straining the fluid, and adding it to the bath. If the patient can not procure readily the convenience of baths, he should be advised to sponge his body daily with luke-warm water, and to rub himself well after with a rough towel.

VESICULÆ.

This variety of syphilitic eruption has seldom presented itself to our observation. M. Ricord states it to be of *very rare occurrence*; it may resemble other vesicular eruptions, such as herpes or eczema, but is more chronic in its progress, and surrounded with a coppery tint, and patches of discolored skin remain after the absorption of the limpid fluid contained in the vesicles.

DIAGNOSIS.—Frequent mistakes take place in reference to this form of the complaint. I have mentioned, at page 332, a case occurring in a child, which was mistaken for syphilis. I have since seen various other cases, and in these instances the diagnosis has not been so easy; still, when we find eczema in plump, strong children (for heretofore the cases I have been consulted about occurred in children), the unaffected portions of the skin retaining their healthy color—and, moreover, if distinct vesicles can be recognised—then we may boldly advance that the disease is eczema, and not syphilis, even although the history may present some suspicious circumstances—the color be of a copper hue—or the nates covered with scales.

Under this head Dr. M'Evers has, I think very properly, classed the case which came on for trial before the assistant-barrister's court at Cork (see chapter on Syphilis in Children) in which it was attempted to be shown that

a child had infected a nurse with syphilis, and a quack being called in had salivated the family, causing an angry discussion among the medical men at Cork, and giving rise to a variety of opinions on the case, which will be found reported in the second volume of *The Lancet* for 1846.

THE TREATMENT will be similar to that of the exanthemata..

PAPULÆ.

Papulæ, like the exanthemata, may appear on the skin without having given rise to any general disturbance of the system: often, however, the general health may be observed to suffer; the face may have presented an unhealthy, pale, or earthy appearance; the eye may have lost its vivacity, and the patient grows thin: these premonitory symptoms are sooner or later followed by an eruption of papulæ, more or less general; they, however, first usually appear on the abdomen; at their commencement rosy, they gradually assume the coppery hue. On passing the finger over the affected parts, they will be found to present a certain elevation above the surface of the skin, with a sensible hardness, and are grouped in clusters, or disseminated irregularly here and there; it is this form of papulæ which has received the name of *lichen*.

It may exist as a simple disease a long time, or it may disappear, as did the exanthemata, or the points of the papulæ will become dry* and whitish, the base will shrivel, and, instead of a papule, a surface covered with little thin scales is seen, quite distinct from the adjacent sound skin; these scaly surfaces may be quite distinct, or several may coalesce, forming a continuous surface, covered with silvery scales, which are reproduced as soon as they fall away, or are rubbed off. This appearance has given rise to the division *squamæ*, but which we believe to be no other than the drying and exfoliation of the epidermis, and reproduction of little silvery scales on the papules.

Those who have specially written on skin diseases, have, as it appears to us, rendered more difficult an acknowledged difficult subject; they have attempted to create distinctions between *lepra* and *psoriasis*, which, in our opinion, are both terminations of a papular eruption. The *lichen* above described may become dry at its summit, scales may form, fall off, and be reproduced, and this process may gain the base, and extend itself in an irregular manner, constituting what authors call *psoriasis*. On the other hand, the base of the papule may become scaly, the centre or apex remaining in a natural condition; the result is, that a circle is formed of these little scales surrounding and surrounded by healthy skin, and as this circle is somewhat prominent, from a slight swelling of the dermis now secreting the scales, it has been considered sufficiently characterized to be termed *lepra*. On the same individual, *lichen*, *psoriasis*, and *lepra* may be seen; and we may here observe that the little white border, described by M. Biett as characteristic of the syphilitic affection, is often wanting.

This scaly state of the diseased skin is very often exceedingly rebellious, remaining for a long time stationary; the progress of the *circles* deserves, however, particular attention: as they extend at their circumference, the centre heals; thus the circle enlarges until it has reached the size often of a shilling; the regularity of the circle is often interrupted by the fusion of a second one, and thus two become united, forming a figure of 8, or 3, or 5. When they are about to get well, the scales fall off, and, instead of the white scaly surface, the circle is only to be distinguished by the difference in the color of the skin, which, after a lapse of time, assumes all its healthy characters.

* "In the study of constitutional syphilis we can not help remarking that the eruption is generally of a dry nature with good constitutions, and suppurative with bad ones; and that either circumstance has much influence on the form of the eruption."—*Ricord, loc. cit.*, p. 437.

During the progress of this form of disease, the complaint may attack the palms of the hands and the soles of the feet, which has been called psoriasis palmaris. We observe effusion of a horny substance taking place immediately beneath the epidermis, a hard corn about the size of a split pea, is felt, which presents a copper color; the thickened cuticle now presents little cracks, and desquamation follows; if the disease is allowed to proceed unchecked, the delicate and unprotected cutis cracks, crevices form, which become very painful, and considerable irritation follows when any acrid substance comes in contact with them, and they pour out a secretion which forms crusts upon the surface; in fact, the palm of the hand becomes so horny, that the patient is in part prevented from making use of it. We have observed this variety particularly in bakers, grocers, masons, &c. We have every reason to consider it a form of psoriasis, which takes on this character from the condition of the epidermis in these situations.

DIAGNOSIS.—It is very difficult sometimes to distinguish syphilitic psoriasis and lepra from that which has no syphilitic taint, as the following case will show:—

"A young widow was sent to me by a medical man, who had treated her for some weeks. The head, which had been shaved, presented several spots of lepra; blotches of a similar character were sprinkled over the back and shoulders, in color resembling those of syphilis; no sore throat; no condylomata, nor affection of the palms of the hands, could be detected; and from her answers to my inquiries, I fully believe she had never had primary symptoms. In the uncertainty of the diagnosis, I took the opinion of several surgeons, and we agreed that the disease was syphilitic. Mercury was accordingly given; notwithstanding, common lepra broke out over the body, thus proving the inaccuracy of our diagnosis. The treatment was altered, and the patient slowly recovered."

Unfortunate as this case was, it led me to distrust my own diagnosis, and shook my faith in the knowledge of others; and ultimately induced me to entertain the opinions I at present hold on the diagnosis of diseases resembling syphilis. On further reflecting on the case, I saw the consequences which might have arisen had mercury been given in larger doses to this unfortunate widow.

This case led me to trust alone to concomitant symptoms, and I determined never to characterize a papular eruption as syphilitic, unless it was attended with other well-marked syphilitic symptoms, such as psoriasis palmaris, sore throat, or mucous tubercles.

My faith even in these became somewhat shaken, by having to treat a *chef de cuisine* to a nobleman, who, in addition to other suspicious-looking eruptions, presented psoriasis of the palm, which he attributed to employing the palm of the hand in holding various instruments which press on this part, just as the pestal does when used by the chemist; be the explanation what it may, the patient presented psoriasis palmaris, a similar affection on the scrotum, and, if my recollection serves me, on the tongue likewise. The case in my own mind was very characteristic, but, although my patient had exposed himself, yet he never had observed chancre, nor could I trace any cicatrix of any pre-existing disease; it was his intention to proceed in a few days to Paris, and I desired him to consult Ricord, who determined that the disease was not syphilitic. Under this advice my patient got no better, and returning to England, rapidly recovered under moderate quantities of blue-pill and dilute citrine ointment. I have seen him several times since, and he has had no relapse. In consequence of this difference of opinion, I asked my late master, when going round his hospital in September, to point out the characters by which he distinguished the simple non-specific form of the affection from syphilitic psori-

asis; in the simple affection, he says, the scales are conglomerate, and thicker on the hands, and, when peeled off, the skin underneath is rough and cracked; in the syphilitic affection, if the skin under the scales be stretched, no cracks will be found; he is fully convinced that the simple affection occurs on the scrotum and tongue.

There is, however, no affection about which so much difference of opinion exists. I lately saw a gentleman sent to me from Liverpool, who had been under treatment by our first surgeons in London with psoriasis of the feet; he had in vain taken tar pills and the usual remedies, but without any good effect; he got rapidly well under small doses of mercury, and has had no return of his complaint. In another instance, a Greek gentleman had a few spots on his body, which nothing removed until he employed fumigation, although he had consulted the most eminent men.

TREATMENT.—The local treatment of these cases should consist at first in warm-baths, provided any irritation of the skin exists, but the chronic nature of the affections usually at once calls for a more active treatment, and the addition of corrosive sublimate, or the sulphuret of potash, to the warm-bath, is attended with the best results. In other instances, we have seen the use of the tar ointment, composed of tar and lard, attended with the happiest results. The patient should rub the parts affected daily with the ointment, and his sheets and shirt should not be changed—he lives thus in a tar atmosphere, and the surface is constantly kept covered with grease; it is, in truth, a most unpleasant position, but we have seen eruptions of simple as well as syphilitic psoriasis yield in a few weeks, which had resisted all other means. It is stated by M. Biett that such treatment will not prevent a relapse; this we believe, but we should nevertheless employ it.

The principal reliance, however, must be placed on.

Mercurial Fumigations, which, when properly administered, effect a speedy cure. As English practitioners rarely now employ fumigations, a few words on their administration may not here be out of place.

The patient, having undressed, is seated naked on a chair in a large box, his head being the only part exposed to the air. This box is heated by a furnace, on which the bisulphuret of mercury is placed, in proportion of three drams for each vapor bath. The intense heat applied soon volatizes the mercury, which quickly fills the well-closed chamber or box with a leaden-colored vapor that condenses on the body of the patient who is exposed to its influence for twenty minutes, during the last ten of which he perspires profusely. The box is then opened, and the surface of the body is gently wiped, so as only to remove the drops of perspiration; a gown is now thrown over the body, and towels twisted round his legs, and the patient laid on a bed, thus swaddled up, between two blankets, which are tucked carefully round him, and additional coverings added. The patient is now left for half an hour, during which he perspires freely, and a glass of toast-and-water may be given. At the end of this time, the wet clothes should be removed, and the patient thoroughly rubbed down; after dressing, he should not at once expose himself to the open air, but remain a short time in a cool room. The vapor, thus administered, may be repeated two or three times a week, for a month or five weeks, and a cure of some of the most rebellious forms of secondary symptoms may be attained. It may be readily assumed that this treatment is one that can not be readily carried into effect in the country, as the necessary conveniences are not at hand. In these instances, the vapor-bath may be had recourse to, and the cinnabar may be placed on a metal plate over a little charcoal-furnace; but, from some experiments which I have instituted, I find that the mercurial vapor is so heavy, that it will not usually rise more than a foot, and the good effects of fumigation will be slight as compared with those arising from the real fumigating apparatus. The body should

be covered with a dark powder when the apparatus is well applied, and gold-leaf will detect the presence of mercury on every part of the body. The above remarks, perhaps, explain why fumigations have fallen into disrepute, as the proper means of application are not always at hand.

In the slighter cases, when only a few spots appear on the body, their disappearance may be readily effected by the employment of ointments. The following is the formulæ I frequently employ :—

R.	Hyd. subsulphat.	3ss.
	Unguent. cetacei.	3ss.
M.	ft. unguent.	

In employing greasy applications, however, care should be taken to remove by tepid water the stale ointment before any fresh is employed.

TUBERCULA OR CONDYLOMATA.

The affection called in England condyloma, or condylomata, is another modification of the papular affection. The French call it *tubercule muqueux, papules muqueuses, or pustule plat.*

This complaint, which we shall call "condyloma" or "mucous tubercle," may commence by slight redness; the epithelium then becomes softened, loses its connections with the parts beneath, disappears, and leaves an erosion; the eroded surface soon turns very red, projecting, and granular, and is covered with a pultaceous secretion, which is, for the most part, extremely fetid, particularly in the anal and the genital regions. These mucous tubercles are first composed of isolated papules, which, by uniting into groups, form large patches; they are flattened, irregular, separated by fissures, and their edges are very sharp. Mucous papule may become very prominent, and from the state of simple hypertrophy they often pass into that of vegetations. Their surface in such a case contracts a good deal; little transparent and globular granulations form, they rise by degrees, and in uniting they give origin to a sort of raspberry vegetation. It springs up very easily indeed in those regions where the skin is in the vicinity of mucous membranes, and is not bound down by the epidermis, and likewise where it is bathed with an abundant follicular secretion—as, for instance, at the verge of the anus, the genito-crural fossa, the internal surface of the prepuce, the umbilicus, the lips, the meatus auditorius, the velum pendulum palati, the tonsils, &c. Mucous papules never yield any inoculable pus;* they do not give rise to any neighboring adenitis; they consist merely of a hypertrophied engorgement of the most superficial parts of the skin, and are susceptible of cure by a specific treatment; whereas such treatment is found powerless in destroying vegetations, even when the latter are situated on a recent mucous papule. Mercury will, in such a case, contribute to the disappearance of the base; but the vegetation remains unaltered."—*Lancet, loc. cit.*

In appearance the affection will vary according to its situation; usually of a more or less circular form, it presents a slightly-firm tumor, rather elastic than hard, more or less elevated above the surface of the skin. At first it is pale, but, exposed from its situation to friction, it becomes shortly of a vermillion tint; the surface is somewhat similar to that of mucous membrane; it secretes an acrid matter, which causes and maintains great local irritation, and is of a very offensive odor; the epidermis which covers it becomes excoriated, and

* Many persons believe that secondary symptoms and mucous tubercles or condylomata, in particular, are inoculable. The fact that two parts which come into opposition present condylomata, has been brought forward to prove this position. Of the fact there can be no doubt, as happens in the vulva, scrotum, thighs, &c., but about the explanation we disagree. The same cause which determines condylomata to one side, will do so on the other, namely, heat and moisture; this is increased in proportion as they are formed; and, although one will follow the other, still, very often, they appear at the same time.—W. A.

the tubercle may present the appearance of a blistered surface. The mucous tubercle may be isolated (as I witnessed lately in a female under Mr. Lawrence's care, who presented one in the axilla), and give the only intimation of secondary symptoms; frequently, however, they occur in groups, and then the secretion of one irritates the other. We have witnessed examples in which a large portion of the thighs, as well as the whole external organs of generation, vagina, and neck of the uterus, have been entirely covered with a crop of tubercles, attended with such local irritation and offensive smell, that the female was the most disgusting object we have ever witnessed. Rubbing one part against the other caused pain, but the general health seemed little affected. By inattention to cleanliness this disease has a tendency to extend; but when care is taken to wash the parts, and prevent the accumulation of the secretion, the affection will remain stationary. Under proper treatment this disease rapidly gets well, but when left to itself it seems to have little tendency to cause ulcerations, which, like those following the pustule, extend in depth rather than in circumference; there seems a tendency to superficial excoriation rather than ulceration. The process of cure is somewhat singular: like lepra, to which it bears a close resemblance, the centre first shows marks of healing. As cicatrization takes place in the centre, the excoriating margin, which is elevated above the surrounding skin, extends until it has assumed the size of a half-crown, and it may then suddenly stop, and the circle get rapidly well; but for a long time after, a livid-purple or coppery-colored spot remains, and affords the only vestige of the disease: such was the case in the instance of the woman above cited. The circles may intersect one another, giving rise to various varieties of cicatrization.

Such is the *course* and *termination* of the mucous tubercle. It, however, often presents varieties, as we shall now proceed to describe. Instead of beginning as we have just shown, it may arise on any point of the body which has been the seat of chancre, and which is irritated and moistened by the secretions of the parts. We have witnessed such an origin at the base of the penis or the scrotum. M. Ricord calls this a change of *chancre in situ* into the mucous tubercle. It appears likewise that a chancre on one part of its surface may be converted into a mucous tubercle, while the other may continue to secrete the virus. Such cases as these have led to the notion that the mucous tubercle is contagious; but, from the experiments of M. Ricord, it is now satisfactorily proved that, unless under these circumstances, mucous tubercles can never be transmitted from one adult to the other, notwithstanding all the attempts that have been made. The chancre, when it has lost its virulent character, and is covered with granulations, may, under any irritation, take on the character of the *ulcus elevatum*, as we mentioned at the commencement of this Part; it will, then, be very difficult to distinguish it from an isolated mucous tubercle, but this is of no great importance.*

DIAGNOSIS.—There are various forms of acne indurata which have been mistaken for syphilitic tubercular affections. At the present moment I am attending a medical man with acne, which my patient can not be persuaded is of a simple kind, because he has pains in his shins, and a slight cold.

I lately had under my care a gentleman suffering from secondary symptoms whose family was very subject to acne indurata. It was impossible to observe any difference in color between the acne indurata (which had existed several years) on the back of this patient, and the specific disease resulting from syphilis. Mercury relieved and cured the recent complaint, but the in-

* I believe this transformation *in situ* of the chancre into a mucous tubercle is one of the forms or varieties first described by Evans in his "Practical Remarks on Ulceration of the Genital Organs," under the term "*Venerola Vulgaris, aut Ulcus Elevatum,*" and more recently by Mr. Skey, in his lectures reported in the "Medical Gazette." Our view of its nature, however, is very different from that taken by these gentlemen.

veterate disease, acne, was not in the least benefited, and he still bears it although his general health is excellent.

THE TREATMENT OF MUCOUS TUBERCLES must be guided by the indications spoken of in preceding sections, and although cleanliness and the internal administration of mercury will often alone suffice, still the following local treatment should be employed. Let the tubercles be bathed twice a day with the following lotion:—

B.	Liq. sodæ chlorinat.....	3ij ad 5ss.
	Aqua.....	3vij.
M.	ft. lot.	

Let the parts be well dried and calomel be sprinkled upon them, and dry lint kept between the excoriated surfaces. In a few days the benefit will become visible, and a cure will generally take place in fifteen or twenty days.

PUSTULE.

Our readers will be much deceived, if they suppose that by the term *pustule* we wish to speak of an acute affection of the skin, similar to that of small-pox, attended with full-formed pustules filled with a yellowish fluid.

Such cases have rarely come under our notice; but we saw a case of the kind in the wards of M. Ricord, in 1847. The patient presented an indurated chancre, with a pustular eruption on its decline; had not the chancre been present, one might have taken it for a case of a man recovering from small-pox, and it formed a striking illustration of those old pictures one sees of leprosy.

Most frequently pustules follow as sequelæ of other eruptions, bad treatment, want of proper attention to cleanliness, or other cause; and at a later period, after the occurrence of the primary sores, a yellowish serum, which soon becomes thick and consistent, is seen raising up the epidermis on the centre of the various eruptions previously described; the pustule does not put on the characters seen in the pustule of the drawing of artificial chancre; it is often covered at the commencement with scales, and then seems to be the result of an inflammatory action beneath the spot of lepra. In other instances, it seems developed in a papula, which becomes converted into an organ secreting pus; scabs form upon it, which increase in diameter in consequence of the additional secretion of pus, becoming hard, brown, and surrounded by a livid or copper-colored areola; these scabs may assume a monstrous size, being at their base as large as a shilling, and projecting above the skin at least half an inch; on removing these masses of scabs superimposed one above the other, and often covering large portions of the body, a dirty, sanguous, and ulcerating surface will be observed occupying their base; the edges are often callous, and extend underneath the epidermis; hence the ulceration is larger than it at first sight appears to be. This form of eruption is usually very chronic in its course, and shows little disposition to heal; the ulcerations remain for a long time stationary, or when they show a disposition to heal, cicatrization takes place slowly; a livid condition of the skin succeeds, a material loss of substance is evident, and white cicatrices are the result.

Pearson states, that on the skin of the negro they leave a whitish appearance.

It is especially under these forms that the general health suffers; the skin is dusky, the countenance is shrunken, the capillary circulation is imperfectly performed, nutrition goes on badly, purpura often supervenes; general prostration of strength, together with loss of appetite, and rheumatic pains occur, indicating that the constitution is severely suffering, and it is not until the health improves that the sores heal. It was probably under such severe forms as these that the epidemic of the fifteenth century showed itself, but it is happily

only from time to time that we now see this disease in persons of bad constitution, or who have ruined their health by excesses.

It is to this form of scab that the term *rupia* has been given, which, as we have seen, is merely the consequence of the formation of crusts; however, there is another form which we have occasionally witnessed under the same circumstances; large *bullaæ*, or vesicles, containing at first a thin, serous, and then a sanguineous fluid, of a most fetid nature, based on an ulcerating surface, are seen on various points of the body; they form crusts, and follow the same course as the disease last described; they indicate a more impoverished condition of the system than even the pustular form, and are often attended with serous or sanguineous effusions into the various cavities of the body. They depend upon a second element over and above syphilis, viz., scrofula or the scorbutic diathesis, and the secret of success depends upon the treatment of the latter affections.

Before quitting the pustular form, we must not omit mentioning a variety which occurs on the scalp, and which we call *impetigo*; it apparently commences at the bulb of the hair, showing itself by a small pustule; a crust is formed around the root of the hair, which, as often as rubbed off, is reproduced by a thick viscid secretion matting the surrounding hair together; this condition of the scalp is usually confined to a few spots, but the whole hair becomes affected, loses its lustre, gets dry, falls off, and the patient may become bald. The glands in the neck may often be sympathetically enlarged, particularly those behind the ears and at the base of the jaw; it often accompanies the other forms of secondary symptoms.

DIAGNOSIS.—It may hardly appear credible that small-pox, at its commencement, may be mistaken for syphilis; but I can vouch for the authenticity of the following case, which was detailed to me by the patient himself, whom I saw soon after the mistake had occurred.

A gentleman had been ailing for some time. He consulted a medical man, in large practice in a provincial town, for an eruption which had appeared a few days before on his body. Mercury was commenced, under the idea of the affection of the skin being syphilitic; but what was the astonishment of the patient on being told, a few days subsequently, that the disease was small-pox which covered the whole body.

I was lately asked to see a foreigner, who presented in a most marked degree an instance of the difficulty of arriving at a diagnosis. This gentleman was covered over with phlyzacious pustules, each surrounded with a genuine copper-colored stain: sycosis existed on the chin, and general ophthalmia, with severe affection of the iris, and sclerotic coats were present.

Two medical men had come to the conclusion that this was a case of syphilis; and at first sight I believed in the existence of specific disease. But on inquiry, I found that the patient had been reduced by a constitutional disease, and he was then in a very debilitated condition; he had never had syphilis or gonorrhœa, nor were condylomata, psoriasis palmaris, nor sore throat, present. This I believed to be an instance (of which I have now seen several) of ecthyma, with ophthalmia, occurring in a debilitated constitution, and yet putting on the features of syphilis.

Mr. Busk, surgeon to H. M. S., "Dreadnought," showed me, some time since, a man covered with an eruption produced by eating bad meat; it presented so much the character of syphilis that I firmly believe almost any one would have called it a secondary symptom, except those who possess the opportunities that gentleman enjoys of studying anomalous diseases in sailors.

THE TREATMENT must be conducted on much the same principles as those we alluded to under the head of papulæ, in addition to these the pustules may be covered with strips of plaster composed of the emplast. ammoniaci c. mer-

curio; in some instances its effects have been general, curing the disease, and producing an effect on the gums, after the other preparations have failed; usually, however, the beneficial results to be expected are purely local. When applied in strips on chronic ulcers, or on those papular eruptions which assume a chronic form, such as the *corona venenaria* and many others, it removes them, as by charm, a short time after its employment.

ULCERS.

Secondary ulcers on the skin are rarely met with, except when occurring as sequelæ of the various eruptions mentioned in preceding pages. Either in consequence of neglect on the part of the patient, or depending on an unhealthy state of constitution, ulceration comes on in a papule, or in a case of rupia, extending itself like any other ulcer. These sores may be isolated, or the body may be covered with them. I have seen them as large as a five shilling piece, in other cases not larger than split peas. Sometimes they are covered with a dry crust, at others they secrete an unhealthy pus.

DIAGNOSIS.—Let any unprejudiced person go round our London hospitals, and he will see unhealthy ulcers on the lower extremities, which are set down as syphilitic, and it is heresy to doubt the correctness of the diagnosis of such sores which are infallibly treated with mercury.

I will here cite a case which I published some years ago in a paper entitled, "On the Diagnosis of Syphiloid Diseases." A female, the mother of several children, presented herself with three circular sores, of the size of a shilling on one leg, and five similar ones on the other lower extremity. They presented a foul surface, covered with sloughs. She stated that a similar sore had existed on the sternum; her mouth bore traces of salivation, which had nearly passed away, and left the gums spongy; the teeth loose, and covered with tartar; the whole system as impoverished as you might expect in scorbutic disease. If I might believe my patient, she had never had primary disease, nor the usual secondary symptoms; but the Abernethian disciple had given her large and repeated courses of mercury, and used black wash for three weeks. Instead of recovering, she had been gradually getting worse, and applied to me, as her medical attendant said she had not taken mercury enough, and was about to increase the dose.

It would seem as if hospital surgeons had predetermined that syphilitic ulcers presented special marks by which they could be known. I have, in my ignorance of these characteristic symptoms, ventured, at the bed-side of the patient, to ask some of our leading surgeons to point out to me such characteristic signs: to the same purpose I have read the most modern articles on ulcers, and the replies I obtain are something to the following effect: "Why, Mr. Acton, you can not doubt that sore, or series of sores, now before you, to be syphilitic; just observe their circular shape, their well-defined edges, the perpendicular margins, their depth, the loss of substance, as if a piece of the size of a sixpence had been punched out, and three times the thickness of gun-wadding. Look, moreover, at the livid or copper-colored areola, the condition of the patient, anemic and reduced, and will you really any longer doubt that such a sore is syphilitic? If you doubt, look at Hunter's works or those of Abernethy. But really your skepticism is unbearable; it can not, I should think, stand against the treatment, for you will see these ulcers get rapidly well with mercury."

When I say that this is almost always the gist of the replies to my doubts, I speak of those of a large number of English surgeons who are deeply convinced of the truth of these convictions. They amount, however, only to this, that surgeons have for a number of years been taught, and now believe, that

these signs represent syphilitic ulcers, and as these opinions have never been questioned, of course the belief remains. In our large metropolitan hospitals, where mercury is given for most primary and secondary symptoms, students are not likely to watch a large number of cases of syphilis treated without mercury; did this happen, they would soon see that syphilis (pure syphilis, undoubted syphilis, no syphilitic disease but syphilis) does not, in a good constitution produce *per se* these ulcers which appear to me to be peculiar to this country, or at least much more common than on the continent. I infer, therefore, that true unmixed syphilis does not produce this form of ulceration, which I admit Hunter and Abernethy thought characteristic.* It is very well to fall back on these authorities, but in the search after truth, I inquire what evidence these authors themselves produced, that such sores were syphilitic, and I find none except the perfect conviction that they were so. Conviction in science is not enough; I see just as much reason to say they are mercurial as syphilitic; the *post* has been here placed for the *propter* as too often occurs in medicine. One thing I have observed, these ulcerations often follow syphilis, they still more frequently follow syphilis treated with mercury; they still further frequently follow syphilis treated injudiciously with mercury in constitutions that have borne and do bear mercury very badly. Now let those who still doubt what I say, watch the treatment of these sores with mercury; for the first few days they improve, but watch them a little, and the reverse happens;† we then hear orders given to abate the preparation as the patient has had enough; improved diet is ordered, perhaps sarsaparilla, and then a second edition of the mercurial is prescribed; the patient recovers, we will admit, but watch the result; he or she was a feeble creature before, and this state of debility increases, to be followed by a cachectic state, which is too common in the present day. Now this cachectic condition does not depend upon mercury alone, it is the conjoint effect of syphilis, mercury, and debility—call it, if you please, syphilitic cachexia.

It deserves notice, moreover, that no other remedy except mercury meets with a fair trial in the hands of mercurial surgeons; any little complication coming on when other preparations are given, causes the remedy, whatever it is, to be left off, and not to be returned to. Not so mercury; if any untoward accident happens, it is not in fault—it is suspended to be returned to—it is the spoilt child of the present century of surgeons; praise is lavished on it; it has no faults, has mercury; all is *couleur de rose*, and the changes are rung on the different preparations of the mineral.

To the students I would say, be not biased by the *ipse dixit* of your teacher. Watch the cases, and see if the opinion I here express on the treatment by mercury be correct or not; look not alone to the healing of the sore; judge if the constitution of the patient be improved or not; you will lose sight of the case

* Hennan states at page 518 of his *Military Surgery*, "I have not seen a single case of ulceration, succeeding to a cutaneous eruption in the military hospitals, since the non-mercurial practice has been adopted, except where mercury had been long and irregularly used." It would appear as if exposure to mercurial vapor had this effect; for Sir W. Burnett, in his account of the effect of mercurial vapor on the crew of the *Triumph*, says: "The Triumph, previous to this event [diffusion of crude mercury through the ship], had suffered considerably by having a number of her men attacked with malignant ulcer, which at one time prevailed to a considerable extent in our ships, both at home and abroad, and in many of the men who had so suffered, the ulcers which had long been completely healed without even an erasure of the skin, broke out again, and soon put on a gangrenous appearance."—*Med. Chirurg. Review*, vol. iv., p. 1012.

† I meet with a strong corroboration of this opinion in Hennan's *Military Surgery*. At page 520, he says: "In common with other physicians, I have, however, frequently observed that mercury, like other substances with which we are familiarly acquainted, frequently mitigates in small doses, but without effectually removing many of the symptoms which it has occasioned when very largely used—a property which has often led to serious mistakes, and which must detract considerably from the value of any examples drawn from the cases of those whose constitutions have been constantly charged with the mineral, when such cases are brought forward as unquestionable proofs of its efficacy where syphilis has resisted every other means of cure."

on his leaving the hospital, but even before he quits the institution form your own opinion on the benefit mercury has done the patient, and when you commence practice, act according to your experience. Compare these sores with scrofulous and scorbutic ulcerations, and then tell me if you distinguish one from another; the diagnosis looks very plausible on paper, but at the bed-side of the patient it will be difficult to make it out.

Even John Pearson admits, that among the pernicious effects are to be added phagedædic ulceration. "Not only chancre or bubo assumes this appearance and character, but new sores form and soon spread, becoming sloughy and untractable. A person using mercurial ointment for four or five weeks, shall have a sore appearing on the upper part of the thigh or on the head or neck, and which very often becomes very unmanageable."—*Manuscript Lectures*.

THE TREATMENT.—On this subject I have little to add to what I have stated under the head of treatment of *papulæ* and *pustulæ*, to which I must refer my readers, in the hope that the fullest directions have been given to treat these troublesome cases.

SYPHILITIC DISEASES OF THE SCALP.—ALOPECIA.

The earliest symptoms of syphilitic affections of the scalp consist usually in itching, attended by rheumatic pains, or the patient will complain of several distinct tender patches; on examination, no trace of eruption or affection can be detected, but if the patient has recently (say within six weeks or two months) suffered from chancre, or induration remains in the situation of the sore, the symptoms will not be confined to those above described, but will soon be followed by loss of hair.

Alopecia, as this symptom is called, commences very gradually. At first the hair becomes dry and crisp, loses its glossy appearance, breaks readily, and a surgeon will be told that the brush irritates the head, and that it is impossible to use a comb from the pain it produces. On examining the head, the hair will in many instances be found broken off close to the scalp, and patches here and there of partial baldness will be seen; in the most advanced stages it comes away with the bulbs attached, and in considerable quantities. The surface of the head is not necessarily scurfy; and it is only in the latter stages that pityriasis is troublesome. The color of the scalp now begins to alter; various points become of a rosy hue, the more apparent, as the surface of the skin generally has a yellowish, unhealthy look. Slight febrile symptoms set in, attended frequently with spots of similar rosy color on the abdomen. At this period the patient often complains of general rheumatic affection of the joints, with loss of appetite and debility. As stated above, this affection of the scalp usually occurs within six weeks or two months from the occurrence of primary symptoms. This, however, is only true when no mercury, or only a moderate quantity, has been given. I lately saw a gentleman who, four years ago, contracted syphilis, for which he took large quantities of mercury. He recovered slowly, and had no relapse for three years and a half; when suddenly his hair began to fall off, and secondary symptoms appeared (as he states), for the first time. He denied having ever had disease of a doubtful character since his first attack.

Alopecia, when it exists alone, or to a slight extent, may, and usually does, depend upon other causes than syphilis. Still the surgeon should bear in mind that it is a frequent sequela of the disease, and requires immediate attention, or the loss of the hair will be considerable, and its growth uncertain. We rarely meet in the present day with those large patches of the scalp completely denuded of hair, or observe the permanent loss of eyebrows or eyelashes, as described by the older writers. I, however, witnessed lately such an instance, in the

wife of a soldier, in whom we were unable to check the disease for some time, aggravated as it was by poverty and destitution.

In private practice patients are very anxious to learn if the hair will grow again; their fears may be quieted by an assurance, that although we can not *at once* stop the falling off of the hair, it will be lost in less and less quantities, and ultimately will grow as strong as before, provided we see the case in the commencement. It will be some time, however, before the hair will attain its usual gloss; and females must not expect it to grow rapidly, or ever to attain its former length.

I have been unable to decide upon the greater or less probability of a good head of hair remaining, after loss from its breaking off close to the scalp, or coming away with its bulb. In either case I have succeeded in securing the growth of the hair; and this might be expected, as we find superfluous hairs, (removed, together with their bulb, by means of tweezers), will be reproduced; and physiologists believe that the matrix of the hair will reproduce the bulb. Müller states, that in animals (during the casting of their coats) "the bulbs of the old hair become pale; and by the side of each a small black globular body is formed, which is developed into the new hair. This is a very interesting fact; the matrix of the new hair is not the old pulp, but seems to be a new sprout, from the productive base of the follicle."

Before quitting the subject of alopecia, I may mention, that if the hair does not fall off at the commencement, we do not find it generally deciduous in the later stages of syphilitic complaints, and we may observe severe cases of secondary symptoms unattended with falling of the hair. In the next stage of the disease, we observe a papular affection of the scalp, which commences with little rose-colored elevations of the skin, to which the patient's attention is directed by the itching of the part. We remark these papulae, called lichen, increase in number, those first formed cease to present any elevation, but slight pearly-white scales form on the apex; these fall away, and are replaced by others, the hair becomes scurfy, and these spots, at first of the size of millet seeds, become as large as a fourpenny-piece, forming the affection called lepra; the whole surface may secrete these scales, or the centre may heal, and the circumference only present the abnormal secretion; this we call psoriasis. Usually, however, the scales are thickest in the centre, and, if the entire scale be carefully removed, this little pyramid will be seen composed of a series of superimposed scales, the undermost, in contact with the scalp, presenting a honeycombed appearance; when seen under the microscope, this mass appears to consist of laminae piled one upon another, their edge forming dark lines; there is nothing characteristic in their appearance; the skin, upon which the scale is placed, looks like that of a recently blistered surface, and secretes a very small quantity of thin, pellucid fluid; at other times it is quite dry, and surrounded with a white line caused by the detached healthy cuticle; this, by Biett, has been considered a diagnostic sign of syphilitic eruptions, but it is not always present, and may be found in common lepra.

In particular situations, especially behind the ears, and in the folds of the neck of stout persons, and those inattentive to cleanliness, we may observe these spots, instead of becoming scaly, remain moist, and we find a raised soft papula, covered with a white, pulpy, tenacious secretion, like wash-leather, the oozing from which excoriates the surrounding parts; we call this condyloma, or mucous tubercle. Unless means are taken to check the disease, these scaly or tubercular eruptions will continue for an indefinite time, increasing on one part, and falling off on another. In some cases, we may witness the points of the papulae of lichen, at an advanced period, become filled with a yellow fluid, which dries up, forming a small crust; we call the affection impetigo. Instead of the point of the papula becoming thus affected, a surface as large as a six-

pence will be observed, covered with vesicles, the contents of which, at first transparent, become yellow, coalesce, and a scab forms, from under which oozes a serous fluid, and on removing it, the skin is inflamed and excoriated; this disease is called eczema impetiginodes. In still more advanced stages, we may meet with ulceration on these spots, which assumes a very intractable character, forming tertiary symptoms. At this period, we may find tumors as large as horse-beans on the scalp, which at first are unattended with pain or redness; fluctuation may be detected in them, and if punctured, a thin, serous, straw-colored fluid exudes; if left alone, they become painful and red, ulcerate, and exposure of the bone follows, producing those necrosed skulls to be seen in our museums, and happily seldom met with in practice in the present day.

DIAGNOSIS.—Medical men, who have had large opportunities of witnessing affections of the skin, will, I think, agree with me, that in the infant and child, affections of the scalp are very common; but that in the adult we seldom meet with them. If a child be brought to you with any eruption, ten to one the head or scalp is affected in some form or other; if an adult consults you, and his body be covered with eruption, seldom do we expect to find any affection of the scalp. So much is this the case, that in treatises on the scalp we find descriptions of its diseases confined almost exclusively to those of infancy. This law, true of diseases of the skin generally, does not apply to syphilitic affections of the scalp. We meet with poor little shrivelled children, the offspring of infected mothers, with their bodies covered with scaly eruption, and their nates one mass of ichorous sores, their nostrils stuffed with discharges, and their eyes profusely secreting a thick yellow matter: the scalp, however, is usually free from disease. The adult, on the contrary, is seldom affected with secondary symptoms, without the scalp presenting some variety of syphilitic eruption. These facts, if acknowledged to be true, are of great practical importance in aiding us in the diagnosis of affections avowedly difficult, and their truth will, I think, be admitted by those conversant with these diseases. The surgeon, however, must not depend upon the appearance of the eruptions on the scalp alone, but be guided by concomitant symptoms.

TREATMENT.—No time should be lost in the local treatment of alopecia. A patient finds much relief from warm baths, particularly when any irritation exists on the scalp. I desire the hair to be cut as short as fashion will allow, but I have never found it necessary to shave the head in the early stages of the complaint; and I question much if this be required even in the more advanced periods, particularly if proper means be employed to check the disease. These consist in the application of stimulating washes or liniments to the scalp. A very simple and elegant one may be made by mixing equal parts of rectified spirit, eau de Cologne, and castor oil together. I employ castor oil, on account of its being the only vegetable oil which is soluble in rectified spirit, and the eau de Cologne covers the otherwise nauseous smell of the oil. If a stronger preparation be required, I recommend equal parts of honey water* and tincture of cantharides, to be rubbed into the roots of the hair every night. The first effect of this spirit wash will be but slight. In the course, however, of a few days, there will be some redness and irritation, and patients complain of a feeling as if something were drawn from their heads and little blisters will be scattered here and there. I need not say the application should be left off before such effects are produced, to be reverted to at intervals as the case may require. Under this local treatment the hair will cease to fall off, and all tendency to pityriasis disappear; the young hair will be seen sprouting freely. The effect of the spirit on the hair will, however, make it dry and untidy, particularly as the brush can not be freely applied, on account of tenderness of the scalp. I

* Honey-water varies much, but like eau de Cologne is a highly perfumed spirit; honey does not enter into its composition.

have attempted to combine the cantharides with animal and vegetable oils, in which it is readily soluble, but by keeping the mixture becomes rancid; this prevents its employment for the toilet-table. To obviate the unpleasant effects of spirit in drying the hair, some form of pomatum or hair-oil should be freely used.

In the slighter cases of falling of the hair, pomatum containing a small quantity of tincture of cantharides, will answer very well. The following is a very good formula:—

R.	Unguent. cetacei	3j.
	Tinct. cantharidis	3ij.
	Ol. Rosmarini,	
	Ol. Lavendulæ,	âa gutt. x.
	Ess. Jasmini	3j.
M.	ft. unguent.	
Sig.	Pomade for the hair.	

The local treatment of the earliest forms of syphilitic affections of the head—that is to say, lichen, lepra, psoriasis, and impetigo—consists in the frequent use of the warm bath, taking care to soak the head well. Under this treatment the scales become loose and detached, the skin assumes a healthy character, and the cephalic pains cease. The spots may be covered night and morning with dilute citron liniment, made according to the following formula:—

R.	Ol. olivæ	3ss.
	Unguent. hyd. nitrat	3j.
M.	ft. liniment.	

I am acquainted with no preparation so efficacious in scaly affections of the scalp. If kept in a well-corked bottle, this liniment does not undergo the usual change of color, which is said to arise from the nitric acid being given off when exposed to the air in pots.

The general treatment has already been spoken of under the head of secondary symptoms.

ONYCHIA.

"We find here the same phenomena which we observed in iritis, and in the cutaneous eruptions; for onychia is, in fact, only an affection of the skin which surrounds the nail; and in this cutaneous attachment may be developed either ecthyma, papules, vesicles, &c. The matrix suffers, and the secretion of the nail gets greatly vitiated; it grows thick and nodulated; and this alteration is somewhat analogous to what takes place in inveterate psoriasis. There is also a great similarity between onychia and alopecia; they both depend on morbid changes interfering with the secretion of those cuticular appendages."—*Ricord's Lectures, loc. cit.*

SECTION III.

SYPHILITIC AFFECTIONS OF MUCOUS MEMBRANES.

EVERY portion of mucous membrane which the eye during life can observe is, like the skin, subject to become the seat of secondary symptoms; thus the lips, inside of the cheeks, tongue, fauces, and throat, furnish the most unequivocal and characteristic features of a constitutional affection; not only the margin of the anus, but the inside of the intestine itself, may be the seat of the disease; the lining of the prepuce may likewise give undoubted evidence of the same fact. The use of the speculum daily makes us acquainted with the

fact, that the vulva, vagina, and neck of the uterus, are occasionally the seat of lesions which may with justice be attributed to constitutional syphilis. To the description of these we shall now direct the reader's attention, and we hope to be able to furnish a more complete history of the secondary affections of these parts than has hitherto been given.

Our observations have been made principally on the mucous membrane covering the mouth and throat, the most frequent situation of secondary symptoms, but the remarks will equally apply to other portions of the mucous membranes.

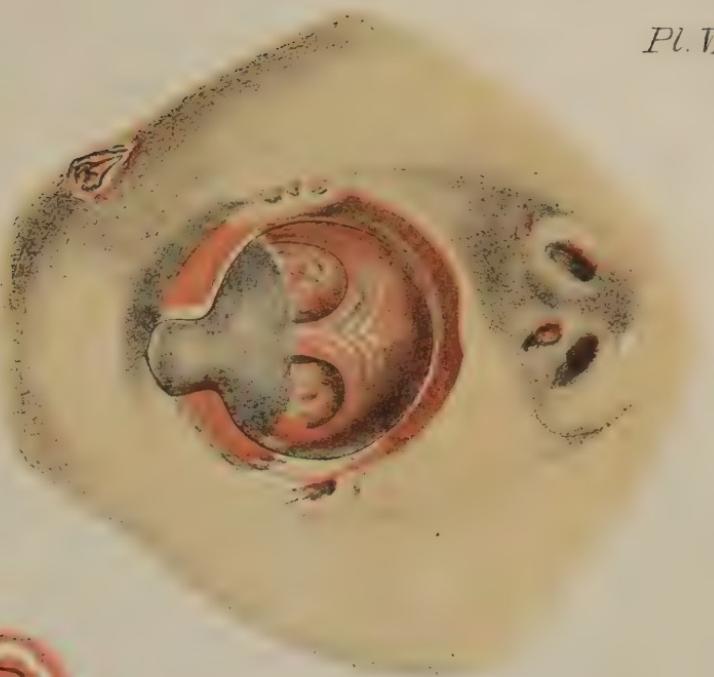
SECONDARY AFFECTIONS OF THE MOUTH AND THROAT.

Some pathologists, and Cruveilhier among the number, have expressed surprise at the tendency of syphilitic disease to break out in the throat; but when the anatomical relations of the throat are considered—when the great number of blood-vessels there met with is borne in mind—when it is remembered that the mouth is supplied with nerves from numerous and different sources—and when we recollect the sympathies existing between the throat and mouth and the various parts of the economy—when we call to mind, likewise, the influence that puberty exercises on the genital organs and those parts contained in the throat, we can not be much surprised that in a disease like syphilis, the throat should so often become affected. The throat, from its functions, is frequently exposed to changes of temperature, and first feels the effects of all excesses; these circumstances, however, will be further alluded to in speaking of the various symptoms of the affection.

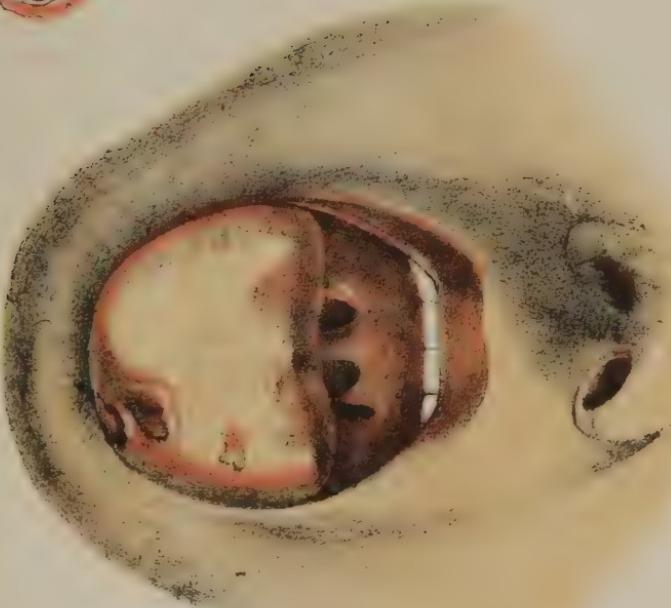
The ANATOMICAL CHARACTERS of secondary syphilitic affections of the mucous membrane are, generally speaking, very characteristic. A redness appears on the surface, forming an erythema of the mucous membrane, which may, and often does, pass unnoticed, as it is difficult to distinguish it from the natural redness of the part; or the surgeon may suppose that the patient is suffering from common sore throat. The affected parts soon, however, become prominent, and the centre of the red circle becomes pale, extending in size until it attains that of a sixpence. Very often several points take on this character, and coalesce; thus neither the circular nor semi-circular appearance persists, but the affected points present an irregular patch of whitened epithelium, which resembles the skin on a washerwoman's hands, or the appearance of the finger which has been covered with a poultice. It looks very often as if these patches had been whitened by caustic, and is compared to the snail track by Irish authors.

If any attempt be made to remove this whitened patch, it will be found very adherent to the tissues beneath; and I have never been able to satisfy myself as to its nature, viz., if it be simply the epithelium altered, or if it be a secretion superadded to it. I am induced to lean to the latter opinion, as the centre of this bleached surface may be raised above the level of the surrounding healthy mucous membrane. In many persons only one of these patches of a circular shape, as in the letter O, is met with. One circle may intersect another, so that a patch of mucous membrane may contain several imperfect circles, as in the figure 8. It is only the mucous membrane, here represented between the lines, that is affected, giving the throat the appearance of containing so many semi-circular bands of swollen mucous tissue, and this appearance we have in vain sought for in other diseases. These patches are spread in great quantities over the mouth, gums, tongue, pharynx, or uvula. Usually there is redness of the mucous membrane around, but complications may supervene. I have frequently witnessed an erythematous blush surrounding each patch; ulcerations may take place on the whitened surface, in the form of points, which unite, and the entire bleached appearance is destroyed, or only remains at the cir-

Secondary.



Tertiary.



circumference, in the shape of a grayish fringe. I have often witnessed these white patches in a stationary state during entire months, particularly when the patient is not exposed to cold or damp, and even under simple treatment they may disappear, but such an occurrence is very rare. They usually become, sooner or later, the seat of ulceration, which destroys the surrounding part, and the circumference of the sore extends. At a later period, particularly in bad constitutions, the affection gains in depth, and assumes a dirty unhealthy character; inflammation or gangrene may seize upon it, or if neglected, it may become what I shall hereafter describe as the tertiary form of sore-throat, causing destruction of the deep-seated tissues, and a loss of the palate, nose, &c.

The tonsils may become so much swollen, that the patient breathes with difficulty, and fever may exist; this is not a necessary complication, however, as the affection is usually chronic, but has a tendency, if neglected, to gain the deeper tissues.

In preceding pages I have described the secondary syphilitic affections of the throat as we meet with them in practice, particularly when no mercury, or very little of the mineral, has been prescribed. If the reader consults various authors, either very slight descriptions of the affections are given, or such as are noticed do not in all respects agree with the above.

When mercury has been given in large quantities for the primary symptoms, the affection of the throat often comes on in spite of the treatment, but, instead of putting on the chronic characters above alluded to, the ulcer is red, inflamed, and sloughy; a piece of the tonsil appears to have been punched out, and the ulcers extend rapidly in size and depth. These are the forms that Hunter was most familiar with, and which he has so fully described; this is the form that is not unfrequently accompanied with rupia, and has been preceded by primary phagedaenic sores, or in which the cases have been treated with large quantities of mercury.

SITUATION OF THE PATCHES OF ULCERATION.—This subject is not without its interest in several points of view; most frequently the patches are observed on the amygdalæ, or on the sides of the tongue, or close to the frænum on its under surface; they are met with, though less frequently, at the corners of the mouth, and they here soon assume the appearance of scabs, which are very characteristic, and liable to bleed when the mouth is examined. Sometimes they are met with on the dorsum of the tongue, here assuming an elevated character, like the condylomata around the anus. I have rarely met with this form of disease on the back part of the pharynx; on the uvula it is so rare that I can recollect but a very few instances, although it may occasionally occur, as I witnessed in a case lately in St. Bartholomew's hospital. The importance of these observations will appear hereafter, in treating of the other form of syphilitic sore throat.

CAUSES.—In tracing back the history of patients affected with this disease, it will be found that, in the adult, indurated chancre has preceded, or co-exists; in the infant, on the contrary, a chancre will be rarely discovered as the antecedent, but the mother will be found to bear traces of primary sores, or it will be ascertained that she is suffering under secondary symptoms, which she has transmitted to the infant during utero-gestation.

Usually, however, the indurated chancre seems only to give a predisposition, to the affection, or rather to give rise to a state of the constitution which we have called the syphilitic diathesis. To occasion the development of secondary affections of the throat, various exciting agents are necessary; these seem to consist in exposure to cold, damp, or moisture; fatigue; improper or insufficient food; excesses of all kinds, &c. Every surgeon must be fully aware that a patient who has been the subject of an indurated sore, although he has not taken mercury, or employed any so-called specific remedies, may with

proper care escape sore throat for some months; but no sooner does he expose himself to any of the exciting causes above spoken of, than he observes these appearances in the mouth and throat.

The consideration of the influence of exciting causes is very important, as explaining some exceptional cases which appear a long period after the chancre. The affection of the throat may be usually said to appear six weeks or two months after the appearance of an indurated chancre; when the chancre has been imperfectly treated with mercury, the interval which elapses may be longer.

Age, profession, and sex, will only act as predisposing causes, inasmuch as they induce excitement of the mucous membrane; thus the child, from the fact of sucking, is greatly predisposed; persons who use tobacco-pipes are very liable to it: for here, as in those who play upon wind-instruments, there is a great call upon the secreting apparatus of the mouth; and in the treatment of its diseases these points should not be lost sight of.

THE SYMPTOMS consist at first in slight pain or stiffness, felt during deglutition; and frequently the first occurrence of the complaint is observed from the difficulty of swallowing hard substances, such as a crust, without suffering; and our patients, on the watch for the slightest symptom, come to the surgeon, who is enabled to detect only slight redness of the fauces; sooner or later (if the disease is not checked), the bleached appearance of the epithelium follows, and it is difficult to say (if the weather be changeable) if we have to treat a common sore-throat or not, more especially where no concomitant symptoms occur.

The tonsils may enlarge, almost obstructing the breathing, giving rise to all the symptoms that impediments of free access of air to the lungs usually produce. In other cases, the tonsils are seen presenting so many cracks or crevices, and every time a patient swallows, intense pain is felt, like that produced by a cutting instrument. The tone of a patient's voice is altered, becoming husky, and when the arytenoid cartilages are attacked, aphonia may be present. It not unfrequently happens that the orifices of the eustachian tubes become affected, and patients complain of pain darting up to the ear, and partial deafness follows.

CONCOMITANT DISEASES.—The affection I am describing rarely occurs alone. I have already mentioned that an indurated primary sore often exists on the penis, while, at the same time, an affection of the scrotum, anus, or genital organs in the female, which is called in France mucous tubercle, and in England condyloma, often precedes or co-exists with it. A rubeolous eruption is often visible on the abdomen; on the scalp an impetiginous affection occurs, as in the case mentioned above; the hair falls off, having previously become dry; the glands in the neck are often enlarged; in fact, all the symptoms described as secondary may be present.

DIAGNOSIS.—When one or more of the white patches, circular in form, or assuming the semicircular character, are seen on a hypertrophied portion of the mucous membrane, unaccompanied with salivation; when the patient admits having lately had, or still bears traces of, an indurated chancre; when various well-marked secondary symptoms are evident on the patient; when these have been but little benefited by care and local applications—few persons will be found who deny that the symptoms are produced by syphilis, and perhaps, with me, they will call the disease a mucous tubercle of the mouth, the consequence of general and constitutional infection.

Were it in all cases as easy a matter to diagnosticate the affection, the study of the subject and the treatment of the patient would be very easy; but those who have seen much of these diseases are fully aware that cases present many difficulties, and it is to the study of these that I propose now calling the reader's attention.

It is frequently found in practice, that in consequence of some disorder of the stomach, or from the use of mercury, aphtha or salivation has occurred ; the mouth may thus present an appearance which masks the disease, and the anatomical characters above described furnish no guide, as it is impossible, from the appearance of the mouth alone, to give an opinion ; it is well in such a case to wait a few days, to treat the salivation by a gargle composed of muriatic acid and infusion of roses, and touch the gums with a small mop made of lint, dipped in the concentrated hydrochloric acid. This local treatment, combined with a gentle aperient every other morning, and a light and nutritious diet, will cure aphthæ and salivation ; but the characteristic mucous tubercle will now become evident, for this local treatment will not remove it, and the diagnosis will become clear.

With regard to the history of the case, considerable difficulties often prevent us from forming a diagnosis ; patients, intentionally or through ignorance, or inattention to the previous complaints, state that they have never had chancres, much less indurated primary sores. The absence of chancres should not prevent us from judging from the other symptoms. Let it ever be borne in mind that chancres may heal in a few days, that they may be contracted in other ways than by sexual intercourse, and consequently may exist on any part of the body, as well as on the penis (see pp. 248-'49). Thus the denial of the patient is not a sufficient reason for concluding that chancres have never existed.

Other forms of secondary symptoms are not always present, and in such cases we are deprived of one of the most valuable guides the surgeon can possess. On the other hand, the practitioner should be well convinced that to come to a correct diagnosis on the nature of syphilitic affections of the mouth, the symptoms by which he judges should themselves be correctly diagnosed as syphilitic ; he should take care that aphthæ on the mouth be not mistaken for the mucous tubercle ; that a sore on the penis, without sufficient reason, should not be considered syphilitic, nor should the chancre have existed years previous to the appearance of the affection,—lastly, if the supposed secondary symptoms are not well-marked, viz., if no rubeolous eruption or mucous tubercles about the anus or scrotum be present, a very cautious opinion should be given, for there are two very great errors which surgeons fall into ; the one sees syphilis everywhere, the other seems to shut his eyes to symptoms which can be rationally and truly connected with the disease ; but I trust I have said enough to show the necessity of weighing each symptom, and giving it only its proper value ; each individual symptom must be compared with and corrected by the other, and practice will assist us in forming a correct decision.

Among the cases that present difficulties in a diagnostic point of view, are the patches or bald or whitened condition of the tongue, which persons in large practice must be familiar with in some forms of indigestion, and likewise in cases of simple lepra and psoriasis ; that such affections will occur without any syphilitic symptoms having preceded them, there can be no doubt, and the diagnosis will depend generally on the absence of any concomitant symptom of syphilis ; but I must admit that the greatest caution must be used in coming to a conclusion.

There is an affection of the throat coming on after mercury has been given for a long period, which may be mistaken for a syphilitic affection. Hunter seems to have been well aware of this effect. He says, page 458, vol. ii., Palmer's edition :—

" Such complaints are more common in the tonsils than in any other part, for we often find that *while a mercurial course is going on*, and the ulcer of the tonsils healing or even healed, they shall swell, become excoriated, and the excoriations shall sometimes spread over the whole palatum molle, which renders the nature of the disease doubtful. I believe these excoriations, as well as such

other appearances of disease as come on during the course of mercury, are seldom or never venereal." He recommends mercury to be left off as quickly as possible, and bark to be given.

Again, at page 459, Hunter says: "We find that new diseases arise from mercury alone. The tonsils shall swell where no venereal disease has been before."

"I have seen mercury given in a supposed venereal ulcer of the tonsils produce a mortification of those glands, and the patient has been nearly destroyed."

—Page 470.

It is often difficult to distinguish syphilitic sore-throat from inflammation attended with secretion from the glands in and about the tonsils. Pearson observes: "The matter secreted by the tonsils resembles that of the sebaceous glands, and when they become ulcerated, a thick and sebaceous discharge is produced. When they burst, they appear filled with this sebaceous substance, which is sometimes so offensive, that it is scarcely possible to be in the same room with the patient; although, in certain other diseases of the tonsils, the sebaceous matter exhales such an insupportable odor that so taints the breath, that it becomes necessary to extirpate the diseased part."—*Manuscript Lectures*, page 62.

PROGNOSIS.—It may be inferred from the description above given of the course of the disease, that the prognosis is favorable; provided no excesses are committed, or the patients do not expose themselves to cold or damp, the disease will not assume a worse aspect for many months, but will, on the contrary, by care and the simplest treatment, gradually subside. I have frequently witnessed such cases; the relief, however, is but delusive, and the disease returns again and again, much to the annoyance of the patient, and in this way years will pass over. If, however, the case be seen at the commencement, there is no form of secondary symptoms which can be more speedily cured; but the patient should be given to understand that in the more advanced stages, when the relapses have been frequent from want of any treatment, or from an injudicious one, the case will be always more difficult to cure, and the chances of further relapses greater; in fact, there are cases which it becomes very difficult to treat in consequence of constitutional peculiarities, viz., an intolerance of mercury, and other circumstances I shall not stop here to speak of. In fine, it may be stated that the disease is more readily cured in proportion to the early period at which we are called upon to treat it, and to the mildness of the other secondary symptoms which accompany it; at later periods, I have witnessed one or two of these patches on the mouth which persist, but these are observed when the patients have neglected themselves at the commencement. Their existence, however, annoys the patient, and vexes the surgeon. Lastly, the general health of the patient must not be lost sight of in forming a prognosis, but all these questions are so fully discussed at pages 328-'30, that I must refer my readers to the sections treating of them.

TREATMENT.—The first indications which result from a consideration of the causes, symptoms, and complications, are to withdraw our patients from everything which can be considered an exciting cause; to put him upon a mild but nutritious diet, to combat any inflammatory symptoms by the usual anti-phlogistic means. Having thus paved the way, the surgeon may feel called upon to employ mercury according to the indications stated under the head of treatment of secondary symptoms of the skin, page 332.

The mouth or throat may be gargled with the following:—

R. Acidi hydrochlorici diluti.....	3 <i>i.</i>
Decoc <i>t.</i> cinchonæ corticis.....	3 <i>iv.</i>
M. ft. gargarisma.	

Or M. Ricord's favorite gargle may be employed :—

R. Infus. cicutæ.....	℥ viij (3ij ad ℥ viij).
Hyd. bichlorid.....	gr. iiij.
M. ft. gargarisma.	

If the throat be very painful, it may be gargled with decoction of poppies.

Among other local applications, when cracks or crevices exist, I know nothing which affords such instantaneous relief as touching the affected parts with nitrate of silver, either in solution or with the solid stick, which, when pointed, enters each crevice.

In the cases alluded to at page 353, the greatest advantage will be derived from iodide of potassium, bitters, good diet, and opium. Such treatment will usually check the complaint, which has a very formidable appearance at first. In these cases syphilis alone is not present, but we have a combination of mercurial disease, *cachexia syphilitica*, and the results of bad management, which require great care; but of all things let the surgeon be careful how he employs mercury, the sheet-anchor of a large number of mercurialists of the present day, and, although a little temporary relief may be met with, yet its results are very serious.

SECTION IV.

SYPHILITIC AFFECTIONS OF THE EYE.

THE eye, like the skin and throat, may become affected by syphilis in both its secondary and tertiary forms. The importance of the organ, and the rapidity with which the disease can destroy the tissues composing it, deserve the particular attention of the reader.

SECONDARY AFFECTIONS OF THE EYELIDS.

Among the patients admitted into the London hospitals, covered as they often are with scaly and tubercular eruptions, the surgeon may frequently corroborate the statement of Mr. Lawrence, that "syphilitic eruptions frequently appear on the external surface, and on the ciliary margins of the lids." We may often be able to trace the gradual changes between the affections of the skin and mucous membranes, corroborating the statements we have made elsewhere, that they are but one and the same disease, appearing on tissues which closely resemble one another. In some instances, the corners of the eyelid have a cracked, scaly appearance.

In other cases, a distinct papule, one half like psoriasis, the other similar to mucous tubercle, may be witnessed on the ciliary margin. More rarely, we observe a softened condition of the mucous membrane, which is reduced to a sort of pulp, and at the same time the conjunctiva is very red and flocculent; one or more small pustules of the size of pins' heads may appear on this softened membrane. This is the disease called by authors *lippitudo*. Pearson, in his "Manuscript Lectures," has a chapter on the subject, showing that the affection had not escaped his notice.

I have not seen the bleached, excoriated surface on the palpebrae so frequently seen on the mouth and tongue, though analogy would expect us to meet with it. Usually, the symptoms above described do not occur alone. There is more or less redness of the tunics of the eye; there may be œdema or inflammation of the lids, and usually the body bears marks of other syphilitic eruptions, partic-

ularly the scaly or tubercular form, and the secondary symptoms as they occur on the throat, head, anus, &c.

On the subject of PROGNOSIS, DIAGNOSIS, and TREATMENT, I have nothing to add to that stated at pages 354-56. The surgeon must be guided by the indications of treatment that have been already so fully alluded to elsewhere.

The conjunctiva is not the only component part of the eye which may become affected. The iris may simultaneously or consecutively show signs of disease, and this leads me to speak at length of this affection.

SYPHILITIC IRRITIS.

HISTORY.—If the reader believes that any particular symptom of syphilis began to exist only about the period that we first meet with descriptions of it, he must conclude that syphilitic iritis first appeared about the year 1801, when Schmidt, of Vienna,* wrote an essay on the subject.† Since this period, few authors on affections of the eye, or venereal diseases, have neglected noticing the complaint, considering it more or less confidently as a syphilitic symptom. I should not dwell upon this fact did it not serve to explain differences of opinion on the history of venereal diseases, and show how easily so important a symptom as iritis was overlooked just as other symptoms are at the present day. If, then, authors generally, previous to 1801, have failed to describe iritis, or to connect it with syphilis, can we be surprised that those who wrote previous to 1496 should not have accurately described primary symptoms, or connected them, as we do now, with general infection and various affections of the skin which we call secondary symptoms?

On looking into the most modern treatises, I find that Mr. Lawrence describes a distinct syphilitic affection of the eye. Mr. Tyrrell speaks simply of iritis, although he admits that "a specific taint, by its influence upon the system, no doubt in many cases modifies the local disease."

Mr. Bacot seems to have no doubt that syphilitic iritis is a consequence of general contamination of the system. Sir Astley Cooper states, however, at page 299 of his Lectures: "I have, I must say, considerable doubt on the subject, for I have never met with a person laboring at the same time under any other secondary symptoms of syphilis, with eruptions or nodes on the bones."

Mr. Carmichael likewise admits a *venereal* iritis, although he says it is difficult to distinguish it from the other forms, except by the presence of some other venereal symptoms.

My own opinion has been greatly modified since I have practised in England. During the period I carried on my investigations on venereal diseases in Paris, although my opportunities of seeing disease were immense, I witnessed so few cases of iritis, compared to the great number of syphilitic com-

* Since writing the above, I have obtained possession of a very rare book, written in 1773, entitled "Exposition Anatomique des Maux Vénériens sur les Parties de l'Homme et de la Femme," par M. Gautier Dagoty Pere. Paris, folio, plates.

He says, page 9: "It happens that persons become blind, not by an obstruction of the optic nerves, as in cases of the Goutte serine, but by a thickening of the vitreous and crystalline humors, which lose their transparency, preventing the rays of light from falling upon the retina. The salt and acid nature of the virus is very fit to produce this effect upon the humor which it coagulates. We observe an infinity of concretions of the aqueous humors, which seem to form cataracts, which, moving about in this humor, cause objects to appear as if pierced, like a spider's web, or as little flies; this is occasioned by a relaxation of the glands, which allows these lymphatic concretions thickened by the virus, to pass into the body of the humor, thus confirming my hypothesis. It seldom happens that a person recovers from these affections by means of the sovereign remedies (*les grands remèdes*).^{*} However, patients are met with who do recover sufficiently well to find their way about, read, and write, which they can not, however, do previous to submitting to these sovereign remedies."

† "Nachstaar und Iritis Nachstaar Operationen," 4to.

* *Grands remèdes* meant, in 1773, the employment of frictions until a patient spat one or two pints of saliva in twenty-four hours, and the salivation was to be kept up eighteen or twenty days.—(*Loc. cit.*, p. 15.)

plaints, that I was induced to deny any relation between them.* At one period of my studies I would have corroborated the statement of Sir A. Cooper, and I believed that the few cases which I witnessed were mere coincidences, so slight were the secondary symptoms which attended the complaints; and it was my intention to exclude syphilitic iritis from this treatise, so unsatisfactory were its diagnostic signs. I even could not go so far as Mr. Tyrrell, and believe that "a specific taint, by its influence on the system, no doubt in many cases modifies the local disease." When, however, on my return to London, I wished to corroborate these views, my confidence became shaken, and I had not long witnessed the severe cases to be met with weekly in St. Bartholomew's and other London hospitals, before I began to see the correctness of Mr. Lawrence's description, as given in his valuable work on "Venereal Diseases of the Eye." I was, however, unable to agree with him in always diagnosing this affection from that which is the consequence of rheumatism or gout, by the symptoms which, as I shall presently show, are not always to be met with.

SYMPOTMS OF SYPHILITIC IRRITIS.—Were this treatise one which professed to treat on affections of the eye, I might be induced to dwell at great length on the various symptoms of iritis, but I must refer such of my readers as would require a knowledge of them to Mr. Lawrence's admirable description. For my object, a more cursory enumeration will be sufficient.

The syphilitic affection of the iris is usually ushered in by considerable constitutional disturbance, headache, inability to sleep from constant pain over the brow, which is aggravated toward evening; but, as Mr. Lawrence observes, even in acute cases such symptoms may exist only in a slight degree, or are entirely wanting.

Mr. Tyrrell lays great stress, and I think deservedly, on the state of the general health and constitution. In nearly all the cases that have come under my notice, the powers of the system were depressed by bad treatment, insufficient food, exposure to all the inclemencies of the weather, frequent attacks of syphilis, excesses of all kinds, and, lastly, severe depletory measures; even in cases where these circumstances have not been so very apparent, the result has shown that the power of the pulse was usually deceptive, and the disease rarely accompanied with evident inflammation. When blood is drawn from the arm, it does not present a firm coagulum, but is sity, dark-colored, and contains more than its average quantity of serum. The skin is dusky or cadaverous, and often covered with eruptions, as I shall have again allusion to allude to.

When the eye is viewed under a strong light, intolerance of that agent is very marked, or it may be little affected; usually, there is more or less external redness of the eye, in the form of a red band round the cornea, as may be very well seen in Mr. Tyrrell's treatise, Plate III., fig. 1.

"The iris," says Mr. Lawrence, "becomes changed in color; a light-colored iris assumes a yellowish or greenish tint; occasionally it is distinctly yellow; and if the eye be blue, a bright green is sometimes seen. Generally, however, the tint, whether yellow or green, is of a dull, muddy cast, and darker than in the sound state." When the iris is naturally dark-colored, it presents, when inflamed, a reddish tinge. Its natural brilliancy disappears, and its beautiful fibrous arrangement is lost, absorbing the rays of light instead of reflecting them, as Mr. Tyrrell observes. The color of the iris is not only thus altered in consequence of the effusion of lymph into its interstices, but it becomes thickened and fringed. Coagulable lymph is likewise effused in distinct globules or masses, usually presenting a reddish color on the surface or margin of the iris, which appearance has been compared by Beer to condylomata. There is, at the same time, partial closure of the pupil, or adhesions of the iris may

* This probably depended upon eye-cases being sent to special hospitals; at least Ricord says so. I am still of opinion, however, that iritis is much more common in London than Paris.

occur, and the pupil be drawn in a variety of directions; but none of these changes are peculiar to syphilitic iritis. Vision is, of course, impaired in various degrees.

M. Ricord makes the following excellent observations in a recent lecture: "In order to be convinced that there is such a thing as iritis of a purely syphilitic nature, it will be sufficient to watch the evolution of secondary symptoms, and to notice the close relation they bear to the different forms of iritis. The lesions which the iris presents are but the repetitions of the cutaneous lesions; for iritis may be either exanthematous, papular, vesico-pustular, tuberculo-ulcerations, &c. The syphilitic affection of the iris often occurs at a very early period of the secondary manifestations, and its outset is marked by inflammatory phenomena. The vessels of the part become congested; there is haemostasis and the coloration changes; a blue iris becomes green, and a black one turns of a fawn color; a vascular areola forms under the conjunctiva—its nature may be distinguished by its deep situation and its radiated form; this is, in fact, a rosula attacking the iris. Lesions may, in this early stage, already be noticed. There is, namely, headache and photophobia, but these affections are much milder than in unspecific iritis. They may even be entirely absent, and the affection then assumes a chronic form; it has even happened that the inflammation which characterizes the outset of the disease, depended on a complication, acknowledging a cause entirely independent of syphilis. The symptoms, with most patients, become aggravated during the night, through an increase of the inflammation. Photopsia comes on, and if the iritis is allowed to progress unchecked, certain modifications arise both in the sensibility and in the different lesions which have already taken place. The dimensions of the pupil and its shape are altered: the first is contracted by an increase of sensibility; the second is changed owing to an alteration of texture. The figure of the pupil is still regular, however; it is merely contracted by reason of an alteration in its vitality, and this is principally caused by an affection of the ciliary nerves. Mydriasis, or anaesthesia of the iris, occurs very rarely in this disease; but the change of shape may persist, and the iris retain its faculty of dilatation and contraction only on certain points of its surface; its margins get angular and irregular, on account of an effusion of plastic lymph which then takes place. Notice here the analogy between these phenomena and the formation of a papule on a cutaneous surface. Some German oculists, among whom I must mention Beer, maintain that an ovoid form of the pupil is a pathognomonic sign of the syphilitic nature of the affection: this oval pupil has, according to them, its larger axis externally and inferiorly, and the smaller internally and superiorly. They suppose, also, that in rheumatic iritis, the longer diameter of the oval is horizontal; and that just as the syphilitic or rheumatic elements are combined in a varying proportion, so does the greater diameter of the oval alter in its direction. But you know that the alteration in the shape of the pupil is caused by lesions which may settle in any part of the iris; and this fact is sufficient to show that there can not be anything decidedly characteristic in any particular shape. The surface of the iris sometimes secretes a plastic fluid analogous to the epidermoid secretion of the skin, which fluid is effused into the aqueous humor of the eye, and renders it dim; the iris, at the same time, mostly forms adhesions with the lens. If the individual affected with iritis has pyogenic tendencies—if he has been a long time laboring under the syphilitic diathesis—the disease becomes more serious; the iris swells, projects either forward or backward, and its surface gets studded with those tumefied points which have by some been called condylomata. With pyogenic individuals these prominences increase in volume, and at last suppurate. Here we have, then, a true pustule, which is perfectly analogous to the pustulous syphilitic eruption on the skin. These pustules may be as many as three in number; they may

terminate by either resolution, ulceration, or purulent effusion :* if by the latter, hypopium is the result, and if ulceration takes place it may destroy the iris. When the latter has passed into this tumefied state, the margins of the pupil become very irregular and fretted, adhesions with the capsule of the lens take place, the cornea and chambers of the eye lose their relative situation, and the axis of vision is destroyed. You see, then, that the lesions which we observe in syphilitic iritis are very similar to those which we find in common iritis ; there is indeed much analogy in the symptoms, but the precedents of your patients must partly guide you ; and it is useful to observe, moreover, that syphilitic iritis is an apyretic affection, and is rarely followed by sympathetic symptoms in the economy. Yet, with respect to the latter, I must say that I have seen patients, evidently laboring under a secondary affection of the eye, suffer from fever and vomiting."—*Lancet*, vol. i., 1848 ; p. 492.

Syphilitic iritis may occur at any period of life ; Mr. Lawrence mentions two cases in children : in one the child was eighteen months old.

But the disease is most frequently seen during the middle period of life, as persons are most liable to syphilis at this age.

In analyzing the cases which Mr. Lawrence has reported, I find that one man out of the seventeen had arrived at the age of fifty-three years. Among thirteen cases of females, two are stated to have been thirty-five years of age, and one to have arrived at forty-five. Now, if any deduction can be drawn from statistics of thirty cases of syphilitic affections of the eye, I might state that of this number seventeen occurred among men, and thirteen in women ; the proportion of females is large, if compared with the number of males and females who are laboring under secondary symptoms, for ten men apply at hospitals for one female. This greater frequency in the female I must attribute to her greater exposure to the exciting causes—a subject I shall presently allude to.

It is remarkable, likewise, in these cases, that we find so great a proportion of cases of syphilitic iritis among persons of advanced life. Syphilitic affections are rare at this period compared with the earlier ones, and yet no less than four cases exist in thirty. This corroborates an observation I have myself made, that, *cæteris paribus*, iritis is more frequent at the later periods of life, and advanced stages of secondary symptoms. Mr. Lawrence's thirty cases further prove that syphilitic iritis occurred twelve times in persons of good or moderate constitution, and five times in cases of an opposite nature. In the thirteen other instances, no notice is taken of the condition of the patient, but it may be inferred from statements made in the course of treatment, that the constitution was greatly impaired. This, again, agrees with an opinion I have above advanced, which I find coincides with the statements of Mr. Tyrrel.

CAUSES.—In the preceding paragraphs I have traced the cause to constitutional infection, in common with syphilitic secondary symptoms, therefore it is not my object here to allude again to this cause ; but as every case of secondary symptom is not accompanied with iritis, it is necessary for us to study the exciting causes, as they may lead to the prevention of the complaint.

On consulting authors, however, I have been able to gain very little information on this point ; I must, therefore, depend upon my own observations. I have already mentioned that the disease is rarely met with in Paris, compared

* This is a very uncommon termination of the affection. During the last summer I had, however, an opportunity of witnessing a case of the kind in consultation with Mr. Lawrence. A Greek gentleman, of a leuco-phlegmatic constitution, contracted indurated chancre : mercury was given, ethymatous pustules broke out over the body, and the posterior chamber of the eye became affected, lymph was rapidly thrown out, and on the third day from the commencement of the attack in the eye the patient was unable to distinguish anything. The most active treatment was had recourse to, but hypopium followed. Fortunately, the eye was saved, but sight was never regained ; and Mr. Lawrence stated that he had never seen the eyesight recovered in these severe cases.

to London ; of this fact I have no doubt ; but of its explanation I am not so certain. I believe it to depend upon the following circumstances : the French prostitute, from the strict vigilance of the police, rarely suffers under any severe form of secondary symptoms ; in her case primary symptoms are instantly attended to, and should secondary affections supervene, measures are at once taken to check their progress ; hence this sufficiently accounts for the fewer number of cases among this class of women.

Why iritis is rarely met with among the male population of Paris, I was some time in discovering, but my investigations however have led me to the following conclusion : patients, or at least the majority I have seen in London, belong to one or other of the following classes : some appertain to the poor, half-starved, emaciated Spitalfields weavers, who have no creature comforts, are ill-fed, badly-clothed, and worse lodged ; disease has a greater hold upon them than the well-fed mechanic.

Other patients in London, who suffer under iritis, belong to the class addicted to drinking large quantities of porter or gin ; they are bloated and unhealthy, and furnish a large number of those afflicted with severe syphilitic affections.

In Paris these two classes barely exist. Where will a surgeon see a being that he can compare to the sickly mechanic of London, who has but work three days in the week, and spends his earnings in gin ? Neither gin nor porter is indulged in at Paris by the lower classes, and hence, in that capital, we do not witness those deplorable pictures of penury, gin-drinking, and dissipated habits, to be met with at each step in our London hospitals.

I am inclined, then, to attribute the exciting causes of iritis to exposure, when the system is depressed or over-excited by want, cold, damp, or dram-drinking—for it is in such cases that we witness the most formidable instances of iritis. I have clearly traced more than one case of iritis to cold caught from a patient's bed being exposed to a draught of air. In most cases there exists an assignable cause for the affection of the iritis, independent of the syphilitic infection.

THE PROGNOSIS may, generally speaking, be considered favorable, but must always depend upon a variety of circumstances. And this brings me to speak of the distinctions alluded to by M. Ricord ; it is by no means an indifferent matter whether there is a mere blush of redness answering to rubeola, or a vesicle, or a pustule, or a condyloma, which forms on the iris ; and as we generally find these different depositions, answering to similar ones on the skin, our prognosis must vary greatly. I lately saw a gentleman who had been sent me from Brighton ; suffering from a rubeolous syphilitic eruption on his body and slight redness of the eye, accompanied with great sensibility to light, a mild treatment only was requisite, compared to another who had the iris blocked up with organized lymph ; thus the reader will see that modern distinctions have great practical value in looking at the prognosis.

When seen in the early stages, and the constitution is good, a favorable result may be always anticipated ; but when the disease has been left unchecked, or has become chronic in consequence of ill-directed treatment, or the lymph effused has become organized, or the constitution very much reduced, the surgeon should not too favorably judge of the case. Even here much may be done, although too often the patient escapes with an impaired organ and feeble vision. I should likewise state that relapses are not unfrequent. (See page 361.)

DIAGNOSIS.—It is not my intention in this section to enumerate all the diseases with which iritis may be confounded, or to speak of the various means which we must employ to distinguish syphilitic from the other forms ; I shall only allude to those which will most materially assist the student, as the greater number of diagnostic symptoms that have been vaunted are now found to be useless.

The *History* of the case alone is a circumstance which may either assist or mislead the surgeon; yet it is the diagnostic sign that I mostly rely upon.

When a patient has had syphilis, it does not follow, as some would believe, that iritis depends upon it, for, I have had previously occasion to observe, a certain period must have elapsed, and this will often be modified by the treatment which has been had recourse to. Usually, when mercury has not been employed, the patient who labors under syphilitic iritis will tell you that three months after a primary indurated sore, eruptions appeared on various parts of the body, which continued, and some weeks later iritis followed. When mercury has been used, the secondary symptoms occur late, and so does the iritis; but even here a twelve-month seldom passes between the chancre which has preceded, and the iritis which is a consequence of it.

Under the head of history I may mention the other co-existent symptoms. Thinking that statistics may, in a case like this, be useful, I have analyzed Mr. Lawrence's thirty cases. I find that in *nineteen male patients* iritis was accompanied—four times by a papular eruption; once by sore-throat; seven times by a scaly tubercular eruption; by no symptoms in three cases; no notice is taken of an eruption in one case; in three cases, eruptions not specified are said to have occurred.

In the *eleven females* the iritis was complicated—twice with papular eruption; twice with sore-throat; three times with a scaly eruption; with the pustular once; condylomata were present in three cases; one case presented no other secondary symptom; the periosteum was affected in one case; the remaining one had a primary sore.

In forming a diagnosis, then, these thirty cases lead to the conclusion that great stress should be placed upon the co-existent secondary symptoms, and my own experience leads me to infer, that on them alone our diagnosis can be founded, for all other supposed syphilitic characters may be wanting. Ophthalmologists are now convinced that the color of the lymph, the direction of the adhesion of the pupil, &c., are signs common to all forms of iritis. When then iritis depends upon syphilis, it rarely occurs as a sole symptom; in fact, so rarely, that it becomes a question if in such a case the surgeon is treating syphilitic iritis.

The above statistics prove, most conclusively, that iritis occurs with a peculiar train of secondary symptoms, usually with the scaly, tubercular, or papular eruptions. Mr. Lawrence mentions having met with one case accompanied by a pustular disease, resembling scabies purulenta; but at page 231 he states, "there exist likewise copper-colored scaly blotches." It is curious that ulceration of the throat was so rarely met with by him. In almost every case of syphilitic iritis I have witnessed, it has been attended with a superficial excoriation. There is but one solitary case in which the periosteum was affected. This agrees with my view of the subject; hence I have with reason placed it among the secondary symptoms of syphilis.

The preceding cases likewise prove that primary symptoms may not have disappeared when iritis commences, as happened in five instances.

TREATMENT.—The consideration of the causes will often enable a surgeon to prevent the occurrence or recurrence of the affection, and I shall not again refer to them, nor state how these exciting causes should be avoided.

When the disease is at its commencement, and the general symptoms run high, it may be necessary to deplete generally and locally; but this treatment should not be too long continued. Mr. Tyrrell has related several interesting cases to show the inefficacy of antiphlogistic measures when carried to excess.

The preceding pages, moreover, show that the affection is not one of those complaints which would probably be benefited by bloodletting; and experience confirms this view of the subject. The indications are, to relieve pain, which

is said to depend upon inflammation of the unyielding sclerotic coat; to check that inflammation, prevent the effusion of more lymph, and cause the absorption of that which is already poured out; destroy any adhesions the iris may have contracted, and, by dilating it, allow of free movement to the pupil.

These indications are best fulfilled by mercury; not, however, given in the manner we have previously recommended. The importance of the organ, and the rapidity with which mischief may occur, demand a more liberal use of the mineral. The opponents of mercury generally, are here unanimous in favor of its utility: it is the neutral ground upon which we all meet. The preparation which modern surgeons prefer, is calomel and opium, in the proportion of two grains of the former to a quarter of a grain of the latter, given every six or eight hours; as the disease yields, the frequency of the doses may be diminished.

There are some observations on the administration of mercury in Mr. Tyrell's work, which will amply repay the attention of my readers. As that gentleman justly observes, mercury is of invaluable service even in the worst cases and most depressed states of constitution, provided we at the same time support the system by generous diet and a small quantity of stimulus. From a non-observance of this plan, mercury has fallen into discredit in some practitioner's hands.

In very weak and feeble constitutions, it may even be necessary to renovate, by tonics and stimulants, the powers of the system previously to commencing mercury, which may be then employed as above described.

When mercury gives rise to unfavorable symptoms, it should not, however, be persevered in; its disagreeing with the patient will usually depend upon inattention on the part of the patient to diet, or to some other cause.

The other indications are fulfilled by drawing blood from the temples, smearing the brow with ext. of belladonna, and attending to the state of the digestive organs; these, and the indications we have given, will usually bring the case to a favorable termination.

SECTION V.

SYPHILITIC AFFECTIONS OF THE TESTICLE.

THE following description of the affections of the testis I have classed under secondary symptoms; but it may be a question with many whether I should not have arranged them under tertiary symptoms, to be described in the succeeding chapter. The syphilitic affection of the testicle is a symptom of transition, which may be grouped either among the secondary or tertiary affections succeeding syphilis, and is an additional proof, if any were wanting, to show that our divisions are merely arbitrary, and proves that late secondary symptoms have a close relation with the early tertiary affections. It seldom appears until six months after primary infection, and very often does not occur until years after. We observe it sometimes during the course of secondary symptoms which occur late, but most frequently the syphilitic testicle exists alone, or accompanied with pains in the bones, exostoses, or gummata.

Syphilitic affections of the testicle are at present rarely met with in private practice, and even in hospitals they are not often seen. The general employment of iodide of potassium, of late years, is probably the cause of this symptom, and in a few years the affection may be unknown.

SYNONYMOUS TERMS.—This affection was described by Sir Astley Cooper in the chapter "On the Venereal Affection of the Testicle." Syphilitic Sar-

cocele is the term employed by Ricord, who says in his lectures (*See Lancet*, vol. i., pp. 572, 599, 1848), "This affection has also been called albuginitis, syphilitic testicle, &c. This lesion of the testis was well known to Hunter and Dupuytren, but Astruc, long before them, had a notion of its nature, for he made a distinction between orchitis resulting from chancre and orchitis following blennorrhagia; and Bell in his turn took advantage of Astruc's observation, in order to attempt the differential diagnosis between the two affections."

SYMPOTMS.—"Syphilitic sarocele generally begins in one testis, and successively invades both of them; it may also attack both testes at once. There are hardly any premonitory symptoms; slight nocturnal pains in the loins are sometimes experienced, but they are extremely rare, and the affection comes on, and reaches a great development quite unperceived by the patient. When his attention begins to be attracted to the part, he finds the testicle already of a considerable size, heavy, and pretty hard; but the size is not invariably increased in every case. With some patients, I have known the disease to run through all its stages without creating any uneasiness; the erections, however, become less frequent, the venereal appetite less imperative, and the seminal fluid gradually diminishes in quantity. If the disease is allowed to proceed undisturbed, the testis ceases to increase, it then diminishes in size, by the resorption of the plastic effusion, and the patients are delighted to see their affection thus apparently declining; but the decrease soon outruns the normal bounds; the testis becomes atrophied, and disappears more or less completely; this atrophy is always preceded by a fibro-plastic degeneration. The latter takes place in the following manner: It begins in the body of the testicle (provided the patient be not laboring under any other diathesis than the syphilitic); two or three points are generally attacked at once; but up to this time the organ retains its normal shape and aspect; nothing out of the way can yet be felt by the hand, except the testis be well isolated from the scrotum, when thin, hard, and fibrous zones will be noticed to surround the body of the testis. Kernels of a greater or lesser consistence soon form, and from them proceed radiations exactly as the osseous radii are given off by an ossified point in the cranium. The whole body of the testis becomes thus involved, and the tumor is felt homogeneous, hard, resisting, heavy, and pyriform. The epididymis, which at the outset was in a pretty normal state, and could readily be distinguished, is now flattened against the posterior part of the testicle, and it can no longer be felt. Notice that the reverse takes place in *tubercular* sarocele, for in this affection the epididymis has a very thick and distinct outline. Whatever development the tumor may take, no other element of the testicle undergoes any morbid change, and the vas deferens as well as the prostate gland remains free from alteration. I need not say that these two organs are attacked very early in tubercular sarocele; in the latter affection we likewise see the other parts entering into the formation of the cord suffer greatly, whereas nothing of the kind is seen in syphilitic orchitis. I must here state, that the pyriform shape, which has always been looked upon as a diagnostic sign of syphilitic sarocele, is not always present; for instance, it does not appear when one or two points only of the body of the testis are engaged. Notice, also, that in the syphilitic affection we have none of those inequalities which the fibrous nuclei produce in the tubercular sarocele. I have seen patients with whom the nucleus was situated in the centre of the corpus testis, and surrounded by healthy textures, so that a certain degree of pressure was required to ascertain its presence. If there is a little effusion in the tunica vaginalis, it is of a passive character, and gives way gradually as the principal affection is receding. The progress of syphilitic orchitis is mostly slow, indolent, and ill-defined; so much so that patients, as before mentioned, perceive the lesion only after it has existed five or six months. It may last six or ten years, and I

can not tell at what period the disease, left to itself, would stop. Syphilitic sarocele never brings on suppuration; whereas, cancer, or the tubercular degeneration, are sure to produce it. Resolution is possible, and then the organ returns to its normal state; sometimes, however, there is a powerful resorption of the plastic matter after the testis has attained a certain volume, and atrophy is the ultimate result. I have known cases where the disease remained quite stationary when it had reached a certain point, and all the means in the world could not make it recede one inch. In such a case, the spermatic vessels are replaced by a nodulated tissue, which has entirely annihilated them. The fibro-plastic degeneration may turn into cartilaginification; and I have seen cases where an osseous shell was formed around the organ. It is quite indispensable to be aware of all these different modifications, in order to be able to adopt a rational line of treatment, and not to attribute to the inefficacy of the remedies we employ that want of success which depends mainly on the peculiar kind of lesion which we have to treat. You will be pleased to observe, that in all those cases of degeneration, the spermatic secretion is less abundant, that the number of animalcula diminishes as the lesion becomes more extensive, and that the fluid which is looked upon as semen is no more than prostatic mucus.

DIAGNOSIS.—“The affections which might be confounded with syphilitic sarocele are tubercles, cancer, and some idiopathic diseases of the testicles. As for blennorrhagic epididymitis, I can hardly understand how it can have been mistaken. I will not say a word about hernia, varicocele, and simple hydrocele, for their characters are too opposed to the plastic sarocele to allow of any error being committed. You will, perhaps, allow me quickly to run over the characters of epididymitis, without, however, comparing the same with those of sarocele; the mere enumeration of them will suffice for the diagnosis. The blennorrhagic testicle is always preceded by blennorrhagia, and has its seat in the epididymis; as a general rule, we may say that the vas deferens suffers likewise; the body of the testis is seldom attacked, and always subsequently to the affection of the epididymis. The progress of the disease is acute and well defined; its duration is limited; and the simplest medication—viz., antiphlogistics, emollient applications, and resolvents—make it disappear. It may affect both testicles, but rather successively than simultaneously. But if it is an easy matter to distinguish epididymitis from syphilitic sarocele, it is rather more difficult to establish clear distinctions between the latter and tubercular or cancerous sarocele; yet if you will take the trouble of grouping together the characters peculiar to the three afflictions which I have been at some pains to describe to you, you will, for the most part, be able to diagnose them pretty accurately. As for the hereditary taint, it may exist in the precedents of each of the three diseases to which I am now alluding—viz., tubercle, cancer, and syphilis. Syphilitic sarocele may come on very early in life, but I have never noticed it before puberty. Tubercular sarocele is also a disease of youth; it mostly comes on toward twenty or twenty-five. Of course, there is hardly any limit for the syphilitic affection of the testicle: it may attack patients of thirty or forty years of age and more. Cancer seldom appears in this region before thirty. Now, if we wish to inquire into the usual history of these three diseases, we shall find that the tubercular or cancerous testicle has constantly tangible precedents which can be laid hold of. It is true that accidental blows and repeated blennorrhagic attacks may provoke the development of tubercles in this organ, but these are mostly exciting causes, which attract the attention of patients to an affection which had long been latent with them. As for the syphilitic sarocele, it is often easy, independently of heredity, to reascend by a chain of evidence to the primary accident, which has been the starting-point of all the phenomena. Plastic sarocele occupies distinctly the body of the

testicle, while the tubercular disease generally begins with the epididymis; the corpus testis is indeed sometimes involved in the latter affection, but the epididymis invariably suffers first, and, besides, an additional sign of the tubercular character is, that the vas deferens and the prostate gland always participate in the mischief; whereas the vas deferens is never affected in syphilitic saccocoele. Cancerous saccocoele generally begins in the body of the testis, and the cord may suffer also; it is not, however, the whole vas deferens which is attacked in this affection of the cord, but its vascular elements only—viz., lymphatics, veins, &c. The vas deferens never gets involved, except when the cancer is complicated with tubercles. Now let us glance at the progress of these three diseases. They all three begin in a very indolent manner. Two of them, the tubercular and the cancerous saccocoele, become painful as they proceed; whereas the syphilitic, which may have given a little pain at the beginning, becomes more and more indolent as it advances, and the affected testis even loses at last all sensibility. If we inquire about the diverse forms which these diseases will assume, we shall find that both the syphilitic and tubercular saccocoele may, at the outset, present similar inequalities, but cancer is regular and uniform at the very beginning. The syphilitic saccocoele, which might have been very nodulated at the outset, tends gradually, as it goes on, to uniformity of shapes; it becomes, in fact, homogeneous, as the plastic effusion begins to surround the whole body of the testis; it then assumes the pyriform shape; and this symptom is so well known, that pathologists have given it as a pathognomonic sign of syphilitic saccocoele; the tubercular saccocoele becomes more nodulated as it grows, and the cancerous just the same. Syphilitic saccocoele is sometimes painful at the outset; the testis feels heavy and dragging, but is less annoying as the disease goes on: the tubercular saccocoele begins indolently, but becomes very painful when it gets soft: the cancerous causes lancinating pains, and gradually softens down. The tubercular affection will inevitably suppurate; the cancerous will ulcerate, then secrete pus, turn fungous, and invade the neighboring parts. The syphilitic saccocoele never suppurates, and when it has lasted a certain time, its size diminishes; or the tumor may remain stationary, and undergo a fibrous, fibro-cartilaginous, or osseous transformation. You must here notice a very interesting difference between the tubercular and syphilitic saccocoele, with regard to their respective tendency to involve neighboring parts. The morbid influence of tubercular saccocoele may run along the inguinal region, ascend through the vessels, and proceed in the direction of the vertebrae, from one lumbar lymphatic gland to another, whereas the syphilitic saccocoele never leaves the testicle. Further, as to contemporaneous affections in the viscera, I need hardly say that the tubercular saccocoele is likely to co-exist with tubercles in the lungs; that the cancerous is often perfectly independent of any carcinomatous affection in other parts of the economy, and that the syphilitic will mostly be accompanied by sundry symptoms of a tertiary nature, which will be of great assistance for the diagnosis.

"I would also direct your attention to the information we derive from the fact of both testicles being affected simultaneously, or one testis only being attacked. I think I can deduce from my experience, that tubercular saccocoele occupies almost constantly both organs; that the syphilitic saccocoele resembles the tubercular in this respect; but that I have always seen the cancerous confined to one testis only. The duration of tubercular and cancerous saccocoele is indefinite; but when the syphilitic has reached a certain period, it stops short, and then decreases, disappears altogether by absorption, or degenerates into ivory exostosis or eburnation.

"Formerly very little trouble used to be taken as to the diagnosis of these various affections of the testes, and when a practitioner was puzzled about the

nature of a tumor in the scrotum, the mercurial treatment was resorted to in order to ascertain whether it was of a syphilitic nature or not. But you are aware that it is rather dangerous to give attenuating medicines to patients who might be phthisical, and it is, besides, very likely that this mode of investigation has often proved a total failure. But in our times we have an excellent touchstone in the iodide of potassium, the effect of which upon tertiary symptoms is far more conclusive than the former modes of distinction. I must not omit to mention that there are cases of idiopathic orchitis which resemble syphilitic orchitis very much, in both shape and progress; but as there is no sort of inconvenience in giving the iodide of potassium, there can be no harm in resorting to it in order to set the question at rest.

PROGNOSIS.—"Plastic degeneration of the testicle is not a very dangerous affection, in so far that it does not endanger the patient's life. If we look upon it as producing certain peculiar and very disagreeable modifications of the organ, it becomes rather a serious matter; but the prognosis will greatly vary according to the time when the treatment is begun. It may, in general, be said that the more the plastic degeneration is recent and circumscribed (and thereby the more unlikely to become organized), the less serious it is. If, however, while the patient is being treated, and resolution is going on, the hard nuclei are noticed to retain their induration, the ultimate result should then be looked upon with distrust; for in many of these cases there is a total destruction of the substance of the testicle, and an actual atrophy has taken place. But if, on the contrary, the normal consistence and elasticity return in the same ratio as resolution is going on, the prognosis will be favorable. The surgeon should be fully aware that when syphilitic saccocoele has reached a certain period, the plastic effusion may become organized, and that therapeutical means have then no longer any power over it; and it would, in such circumstances, be perfectly useless to persevere for a long time in the treatment. The rule laid down for the diseases of bone holds good in this stage of the testicular affection; for you all know that no applications in the world could promote the resolution of an ivory exostosis. In the disease which occupies us, the organization of the effused lymph, the cartilaginification, and the degeneration, correspond, in some manner, to the stages which, in the diseases of bone, lead to ivory exostosis."

TREATMENT.—We have stated above that the syphilitic affection of the testicle was a symptom of transition on the borders of secondary and tertiary syphilis: consequently it is sufficient to state that we must employ the treatment applicable to those two periods of the affection—namely, mercury (see page 290), together with the iodide of potassium (see page 373). I consider the combined use of these remedies better than their administration singly. I have often seen the employment of the iodide alone bring about only a slow resolution, which the use of mercury has expedited.

Ricord says: "You must be careful to modify the treatment just described according to certain peculiar manifestations. For instance, when you have to contend against syphilitic sarcocoele, and the same is exempt from complications, it will be sufficient to use the general treatment. But when there is much inflammation, you must have recourse to antiphlogistics and emollient applications; and if it were noticed that the testicle is suffering from both syphilis and struma, anti-scorfulous remedies should be added to the usual treatment of such cases. The plastic effusion will be efficiently controlled by rubbing the part with the mercurial ointment, and covering the whole with a soothing cataplasma; and much benefit will likewise be derived in these cases from methodical compression with strips of plaster."—(See page 143.)

GUMMATA, OR TUBERCLES IN THE SCROTUM.

I can not conclude this section on affections of the testes, without directing my reader's attention to tumors which arise on the scrotum, and which, occurring as they do in the cellular tissue, not unfrequently implicate the testes, and are frequently mistaken for affections of that organ.

M. Ricord thus describes them: "The elastic tumor, yielding to the hand a sensation as if it were filled with gum, is an essentially tertiary symptom. It never appears before the fifth month after the contagion, which is the primary cause of the tertiary affection; but it may also come on thirty or forty years afterward. It mostly begins with a hard kernel, of a small size, situated in the deeper layers of the skin. It grows very slowly—so much so, that I am not quite sure of the size which it may reach; but this development takes place without any local or general reaction; and in the cases I have observed, the tumor seldom went beyond the size of a walnut, and mostly remained much below it. These tubercles or elastic tumors are not confluent, and this fact is sufficient to establish a distinction between them and molluscum, which generally is remarkably confluent. When it settles on the testicle, it is mostly solitary, all the surrounding parts remaining perfectly sound. When an elastic tumor is left to itself, or treated by mercury, it will inevitably suppurate; and before the use of the iodide of potassium was introduced, it was looked upon as incurable. Thus M. Cullerier always advised the cauterization of such tumors, and I was in the habit of advocating their removal with the knife. As the syphilitic tubercle grows, it becomes rather painful; this is almost always owing to inflammatory action set up within it. Before this complication occurs, it lies quite free in the cellular tissue, and adheres to the skin in only one point; but when inflammation sets in, it gets confounded with the surrounding tissues, its mobility is lost, the skin covering it becomes red, swells, softens, and ulcerates on one or several spots, and a deep ulcer follows the plenteous discharge of purulent matter. The edges of the sore get undermined, and the neighboring parts are involved in a destruction which varies according to the organs whereon the tumor has settled."—*Lectures in Lancet*, vol. i., 1848; p. 600.

TREATMENT.—If you have elastic tumors of the testis to treat, the best practice is to open them as soon as fluctuation is detected, and you should have recourse to sedative applications when you perceive that they are surrounded by an inflammatory areola. But when the ulceration presents no redness, nor any symptoms of irritation, a very good lotion may be made with a solution of iodine, in the proportion of one half or a whole dram to twelve ounces of distilled water; and when this solution is being prepared, a certain quantity of iodide of potassium should be added, to render the iodine more soluble. If the granulations of the tertiary ulcerations are too prominent, they should be destroyed with the Vienna paste, or any other caustic.

CHAPTER IV.

TERTIARY SYMPTOMS OF SYPHILIS.

DEFINITION.—By the term *tertiary symptoms*, we mean those constitutional syphilitic affections usually included under the name of *nodes, inflammation of the periosteum, exostosis, caries, and tubercles of the sub-cutaneous and sub-mucous cellular tissue*; like secondary symptoms, they are not inoculable, but are incapable of transmitting, hereditarily, constitutional syphilis.

We thus observe that tertiary symptoms generally occur in the sub-cutaneous or sub-mucous cellular tissue, in the structure of bones, fibrous textures, lymphatics, testes, or in the liver, lungs, brain, heart, and muscles; “but I have,” adds Ricord, “found that serous membranes remain free from tertiary lesions.”

HISTORY.—Previously to Hunter’s time, these symptoms were considered under the term secondary effects of syphilis, or constitutional syphilis. That original observer, without placing them in a division quite apart from the rest, thought it, however, necessary to distinguish them, in some measure, from secondary symptoms, properly so called; hence we find them placed together, and classed under Paragraph III., in his work, which is thus headed, “*Symptoms of the Second Period of Constitutional Syphilis.*”

M. Ricord, in his classification, preferred separating them from secondary symptoms, and making a distinct division, which he has called *tertiary symptoms*. In the following description it will be seen that they differ from secondary symptoms in various points, and to a sufficient extent to authorize us in placing them in another division. Though they depend upon chancre, they follow it after a much longer interval; they are seated in other and deeper tissues, can not be transmitted from mother to child, but are directly capable of producing in the offspring a scrofulous diathesis.

Although we have separated tertiary affections from secondary symptoms, we occasionally find a great difficulty in assigning a symptom to one or other division, as these affections must necessarily approach one another by the most gradual amalgamation, as just now seen in treating of syphilitic sarocele, which we stated was a symptom of transition; still the distinction is generally well marked, and in a practical point of view, in regard to treatment, is of the greatest importance.

In accordance with the plan I have hitherto followed, I shall describe the general principles applying to this affection, and then shortly allude to the particular forms.

SECTION I.

TERTIARY SYMPTOMS.

CAUSES.—Those who have seen syphilis of late years treated by simple means, without the aid of mercury, must, like ourselves, have been able to observe the natural history of the disease uncomplicated with those effects which we admit mercury *may* produce. In such cases we have been able to trace tertiary symptoms to the effects of the syphilitic virus, at first committing local ravages, next infecting the constitution, and lastly, giving rise to such lesions as we are about to speak of. In consequence, then, of these symptoms appearing

when no mercury or any other treatment has been had recourse to, as well as from their occurrence, a certain period after the primary introduction into the economy of the syphilitic virus, surgeons are agreed to attribute them to constitutional syphilis.

It would be wrong to suppose, however, that syphilis, when left to itself, universally produced these effects. Fortunately for humanity, experience has shown that in the majority of cases tertiary symptoms do not occur, unless excited by the

PREDISPOSING CAUSES.—It is not so easy to discover the predisposing causes of tertiary, as it was of secondary symptoms; however, it is to the constitution that we may generally ascribe them, and to injudicious or neglected treatment; still, tertiary symptoms will occasionally occur, in spite of all our endeavors. Such cases are, however, of very rare occurrence.

The *constitution*, as a predisposing cause, has a considerable effect. Observation shows that persons of a lymphatic temperament are most subject to the ravages of syphilis; this we have seen throughout the whole history of the disease, and is more especially true of this stage; for, as we shall presently see, scrofula and tertiary symptoms have many points in common. Let it not be supposed, however, that it is only in the pale and the emaciated that we see such effects, for syphilis often appears in very severe forms in stout and plethoric individuals.

The *previous habits* of the patient will act as a powerful predisposing cause: thus, a constitution naturally good, but depressed by dissipation, poverty, insufficient clothing, exposure to damp or unwholesome air—in fact, all these causes which induce secondary symptoms, have a great tendency to produce likewise the *tertiary form*.

Previous disease will naturally have a great influence; in the first place, we may mention the existence of secondary symptoms. It is a fact which can not be denied, that when chancre has produced secondary symptoms, the tertiary form of syphilis may sooner or later make its appearance, showing a tendency in the constitution, which, if not controlled, will produce the worst effects. The severity of the form of secondary symptoms, the late period at which they have been treated, the obstinacy with which they have resisted, and the length of time the *syphilitic temperament* has existed, are so many predisposing causes, and may furnish the surgeon with many indications which will induce him to judge of the probability of their occurrence.

The *Treatment of the Primary and Secondary Forms* may act as a very powerful predisposing cause. We shall not here repeat what we said, when speaking of primary sores, nor more than allude to what we stated under the head of Predisposing Causes of Secondary Symptoms; the same observations apply equally to tertiary symptoms. With respect to the treatment of secondary symptoms, daily observations prove that if constitutional syphilis is treated without mercury, tertiary symptoms will occur; that even when mercury is employed at an early period of the occurrence of secondary symptoms, the appearance of tertiary symptoms can not be prevented. If, however, the mineral has been used judiciously, they will be slight; but if mercury has been indiscriminately used, or if the precautions spoken of under the section on the Employment of Mercury, be not attended to, tertiary symptoms will not only occur in spite of, but become complicated with, those effects which depend upon the mineral; the constitution will be depressed, and the two diseases carried to an extent that is now fortunately rarely witnessed.

COURSE.—This stage of syphilis has a peculiarly chronic character. In the majority of cases, and under the circumstances above described, the secondary form passes insensibly into the tertiary, for we should be guilty of a great fault, did we lead our readers to suppose that the limit between the two stages is

always distinct. In the natural course of syphilis, this transition is insensible ; without any accession of general symptoms, the tertiary form appearing frequently during the existence of the secondary, in the same way that the latter may come on during that of the primary. Under other circumstances, from treatment, care, &c., the secondary symptoms may have successively disappeared and returned ; and, lastly, assume the tertiary form.

Finally—and these are by far the rarest cases—after the treatment of a primary indurated sore by mercury, a considerable lapse of time may pass away, and secondary symptoms may not follow, but after exposure to cold, from disease or some exciting cause, tertiary symptoms all at once declare themselves, at first under a slight form, successively increasing in severity. Such cases, though rare, we have met with ; and they further prove the protective power of mercury, though they militate against the idea of its specific powers.

The COMPLICATIONS are various ; inflammation, gangrene, scorbutic diseases, or scrofula, may occur, masking altogether the disease, which gradually loses its specific appearance, and degenerates into a general disease of the economy. Of course, as one or other of these complications occur, so will the course of the tertiary symptoms be altered, and termination different.

The PROGNOSIS is always grave ; it shows that syphilis has made deep inroads on the constitution, and that its cure will require time, and a treatment which demands patience on the part of the surgeon and the patient ; the latter, however, should be made aware of the precautions necessary to be taken, and the consequences of their non-observance. Although we may often triumph over the disease, we are liable to see it return ; and there are cases in which our treatment can only be palliative, or the patient, having consulted us too late, is obliged to bear the deformities which nature is unable to remove, although art may frequently alleviate them.

"Tertiary symptoms," Ricord thinks, "never occur in children immediately after birth, as an hereditary manifestation, unless the father, or the mother during gestation (whoever has transmitted the taint), underwent a treatment for secondary symptoms. The tertiary symptoms hardly ever come on before the sixth month after the occurrence of the primary sore. Still it may happen, once in a thousand cases, that they appear toward the fourth or fifth month. When the half year is passed, there is no limit within which the tertiary symptoms might be included ; they may come on after many years. These tertiary manifestations are as rare as the secondary are common ; but, still, you can never promise a patient that he will be free from the former."

"Syphilis in this tertiary period is no longer hereditarily transmissible, but it then modifies the system in a different manner, namely, it engenders scrofula. M. Lugol's and my own observations fully verify this assertion."

DIAGNOSIS.—The reader will doubtless have remarked, that as we receded from the point of primary infection, the diagnosis became less certain ; that during the ulcerative period of chancre, a positive diagnosis could be arrived at through inoculation, but when cicatrization had once taken place, we were obliged to confine ourselves to a rational diagnosis. This became more evident as we spoke of secondary symptoms ; however, we showed that there were certain features peculiar to secondary symptoms, as, for instance, mucous tubercles.

In the form of tertiary symptoms, however, our diagnosis must be founded on rational principles alone, for we have no certain test. The history—the antecedents—the course—concomitant circumstances—the treatment—the character of the affections—will, if taken together, indicate the nature of the complaint, and enable us to form a diagnosis, but this should be always done with caution. The treatment should still be such, that if our diagnosis be incorrect, the remedies made use of can not be injurious. This is a rule that our readers will shortly be enabled to appreciate.

TREATMENT.—*The preventive and prophylactic treatment of tertiary symptoms will consist, in a great measure, in the employment of the means spoken of when treating of secondary symptoms, page 331, and in paying attention to the rules there laid down. We think it, therefore, unnecessary again to return to that subject. The same remark applies to causes both predisposing and exciting. The knowledge of any predisposing cause being attained, the surgeon will necessarily remove it if it already exist, or prevent its development by all the means in his power; this can not always be obtained, however much it may be desired, or the patient demands our advice too late; it then behoves the surgeon to remove, in as short a time as possible, the effects produced; and this brings us then to a consideration of the*

Curative Means.—In M. Ricord's work on the treatment of tertiary symptoms, which, before proceeding further, we beg permission to quote, we find the following paragraph:—

“ Although we recognise the syphilitic virus as the regular cause of tertiary symptoms, we must allow that it undergoes a modification in secondary symptoms, in consequence of which it is no longer inoculable. In tertiary symptoms this modification is still more striking. If it were not hazardous to form an hypothesis in order to explain facts, the proximate cause of which it is difficult to fix upon, it might be said, that in the *secondary symptom*, which is kept up by its presence, the virulent cause still exists; *that in the tertiary symptom it is completely transformed.*”

The important consideration of this last phrase we can not too strongly impress on our readers; it forms one of the best indications for the treatment which, whatever may be said on the subject of secondary symptoms, ought not and can not be specific here. Tertiary symptoms must be treated on general principles; the same means should be employed as if the diseases we are called upon to treat depended upon any other than a specific cause now completely transformed.

Our first care should be to remove all inflammation or irritation which can aggravate the local disorder; this point gained, we may next turn our attention to the constitution. The employment of tonics, nutritious diet, proper clothing, &c., will often have the best effects. Among other preparations, we have observed those containing the principles of *opium* to be followed by the best effects in allaying local and constitutional irritation. *Mercury*, in its various forms, is, generally speaking, as prejudicial at this state as it was beneficial in secondary symptoms; and although in those symptoms of transition between the secondary and tertiary, as in deep tubercles of the skin, attended with callous ulcerations, it may still be advantageously employed, it is nevertheless true that the further we retire from the early stage of secondary symptoms, the less efficacious it becomes, until it ends in being highly prejudicial; and when used even in the former cases, it should be combined with iodide of potassium.

If mercury then be, generally speaking, prejudicial, surgeons enjoy the satisfaction of knowing that modern practitioners have the credit of discovering this, and rating the effect of the mineral at its just value, while observation has enabled them to replace it by a preparation which daily experience in various parts of the world promises to establish as one of the most efficacious in the *Pharmacopœia*—we mean iodide of potassium.

IODIDE OF POTASSIUM.—Those who have, like ourselves, witnessed the effects of this preparation given in all the stages of syphilis, will allow that its good effects seem especially evident in the cure of tertiary symptoms. But, although we thus speak of the iodide as a remedy for this form of the complaint, we must not forget that it will not destroy the diathesis, *it will produce a modification and mitigation of the symptoms without complete eradication of the diathesis*: beyond this, neither mercury nor iodine will act.

History of the Salt.—Until the last few years anything but unanimity has prevailed on the cases in which the iodide of potassium should be given. I have at page 331 alluded to the opinions of Sir. B. Brodie, and M. Ricord, on the value of this preparation. The late Dr. Williams was a great advocate for iodide of potassium, and he seems to have given it pretty indiscriminately in all cases, in preference to mercury; but on closely examining his cases, the reader will at once see that the late physician to St. Thomas's hospital admits its inefficiency, although he does it with hesitation, and believed that it cured some varieties of eruptions in preference to other.

As I have already stated at page 331, generally speaking, iodide of potassium can not be depended upon in secondary symptoms;* but if its effects are found to be less certain in this stage of the complaint, observation every day corroborates our past experience, that the iodide of potassium possesses specific influence in tertiary symptoms, and it is now found to be a preparation without which we could not properly treat syphilis when it has assumed the tertiary form.

* In speaking of the treatment of secondary symptoms at page 331, I omitted mentioning that although mercury is the remedy to be preferred in constitutional syphilis, yet there are cases in which the surgeon may with still greater advantage give iodide of potassium. A few years ago I drew, by means of the *Lancet*, the attention of the profession to the fact, that iodide of potassium was principally of use in cases in which mercury had been used for the primary symptoms, and yet relapses had occurred: the rapid disappearance of the symptoms will frequently follow the administration of the salt. It is true that a few months after the salt has been omitted, fresh spots may appear, much slighter than the last, offering no longer the coppery tint, but if no treatment is pursued, the symptoms will increase to a considerable extent; and if we again recur to the iodide, the same success does not attend the second relapse, nor do we find the same rapid disappearance of the symptoms; the system, however, is now in a condition to bear mercury, which may be administered with the best effect.

I ought further to have recommended a trial of iodide of potassium in those numerous cases which come before us among the dispensary and gratuitous patients, presenting secondary symptoms in some modified form, in persons whose guns betoken courses of mercury, and who tell us that mercury has been given, salivation produced, and yet the disease has relapsed. The salt is particularly advantageous to that large class of individuals in whom dissipation, prolonged courses of mercury, and inattention to the directions of a medical man, may be expected. In private practice, when unable to ascertain the previous course of treatment, or when mercury and the iodide have both been given, without any benefit, and my opinion is asked what farther remedies are likely to be useful, I usually support the system by improved diet and change of air, and, after a short interval, commence a course of iodide of potassium, combined with tonics, in the form recommended above. In these recommendations I do not stand alone. The late Dr. Williams stated: "The roseola syphilitica annularis usually rapidly declines when treated either by small doses of mercury or by iodide of potassium, but the latter medicine is, from its innocuous properties in all cases, as the effects are equal, to be preferred to the former. There are cases, however, which appear to yield only to the iodide of potassium."—*Williams's Elements of Medicine*, vol. ii., p. 156.

"The purpura syphilitica sometimes yields to mercury or to the iodide of potassium. Occasionally these cases are most rebellious to every remedy, whether antiphlogistic or antisyrphilitic."

"Of all the syphilitic papular eruptions of the skin, the lichen syphiliticus simplex is the most intractable by medicine. The iodide of potassium does not appear to influence this form of disease, and when treated by mercury or by sarsaparilla, separately or together, it often continues many months."—*Loc. cit.*, p. 155.

The late Mr. Carmichael, of Dublin, spoke highly of iodide of potassium during the first four or five weeks of the existence of the papular and pustular eruptions; also in the seamy tubercles following phagedena: like Dr. Williams, he recommended it in certain forms of secondary symptoms, and employed mercury in others.—*Carmichael's Clinical Lectures*, p. 176.

Mr. Carmichael's treatment of secondary symptoms is summed up at page 115 of his Clinical Lectures. During the existence of fever, confinement to the house, the exhibition of antimonials, and such medicine as determine to the skin; abstinence from meat or wine; about the end of the second or third week, decortion of sarsaparilla, conjoined with small doses of tartarized antimony; and when fever has subsided, hydriodate of potash, in doses of five to eight or ten grains, three times a day. "When the spots have all desquamated, if they should continue to linger long, notwithstanding this treatment, you may give with advantage small doses of mercury in conjunction with sarsaparilla, in place of hydriodate of potash. The preparation or formula I usually prefer is that of Plumbe's or the compound calomel pill, of which four or five grains may be given twice or thrice a day. This course I pursue until the eruption has disappeared, the throat is well, and the pains of the joints no longer felt, under confinement to the house in cold or wintry weather; but in summer, or in warm weather, I am not in the habit of exacting strict confinement during the desquamating stage; however, generally speaking, the less the patient exposes himself to our cold, variable climate, during the continuance of the eruption, the more certain will be his recovery; and by attending to this advice, as well as in avoiding the use of mercury until the eruption has desquamated, you take the best measures to secure your patient against iritis, a return of the eruption, or a relapse of the other secondary symptoms attending this form of disease."—*Loc. cit.*, pp. 115, 116.

I may likewise here state, that I have derived great benefit from giving iodide of potassium in these cases of spurious induration alluded to at page 285, occurring in scrofulous constitutions.

Mode of Administration.—I am in the habit of prescribing the salt according to the following formula:—

R. Potass. iodidi.....	3 v.
Tt. gent. c.	3ij.
Syrup simpl.	3xv.

M. ft. mist. sumat coch. mag. unum ex cyatho amplio (*a small tumbler*) infus. quassia ter die.

R. Rass. quassiae.....	3ij.
M. ft. chart. pro infus.	

Mitte chart.....vj.

I desire the patient to put the contents of one of these papers into a pint jug, and pour a pint of boiling water on it, and allowing it to stand two hours, strain and drink the pint of bitter infusion at three draughts, having put into each small tumbler of the fluid one table-spoonful of the syrup.

It is a very general belief in London, among our leading surgeons, that all the good that iodide of potassium can do, will accrue if three or five grains be given, three times a day; more than that, I am daily told, will do harm, or if more be given with impunity, the article is spurious. I do not wish to underrate the good effects of the salt often resulting from small doses, but I am as equally convinced that large doses may be given with impunity. I lately had a gentleman from Scotland under my care, who took the remedy in such quantities that he purchased it by the half pound, and yet it was a genuine article; but I will go further than this, and assert, from a pretty large experience of its effects, that small doses will not do any or only the slightest good in many instances.

I met Mr. Wallace in consultation a short time since, in reference to a case of tertiary symptoms of the nose and brow, which the iodide had relieved, but not cured, although taken in these small doses by the direction of another surgeon for nine months; here the salt had been obliged to be left off, because iodic intoxication was said to have been produced, together with symptoms of affection of the brain. Now in these instances, time, rather than the dose, was in fault, and the surgeon who entertains these ideas scruples not to prescribe iodide of potassium for years, rather than give it in larger doses.

I saw with Mr. Vickers, a gentleman who has now entirely recovered, to whom we gave large doses of iodide of potassium with bitters, yet small doses had failed in curing him, although given for long periods under the advice of other practitioners. I mention these cases because prejudices exist against the employment of the remedy, whereas, in France, Ricord gives it in anything but homœopathic doses, and with the most signal success.

The effects of the remedy show themselves in first producing an increased quantity of urine, which is pale and straw-colored. The general surface of the skin loses its unhealthy character, the appetite improves, the circulation becomes somewhat hurried, and the system rallies. The eruption loses the coppery hue, the scales separate, and we observe the skin, where the spots existed, assume its natural texture, the hair regains its gloss, and ceases to fall off. Ulcers heal, pains in the bone disappear as if charmed away, and the general health is re-established; in such cases the remedy must not be immediately left off, otherwise we run the risk of the symptoms returning.

Counter-Indications to its Use.—The constitution, however, does not always bear this remedy. Patients who are taking it complain of pain at the pit of the stomach (this happens rarely except a large dose is given in a small quantity of fluid), in other instances a very profuse discharge takes place from the nose, of a secretion like serum, and will wet through several handkerchiefs in a few hours; it is of great importance that the patient should be told of the probability of this occurrence or he may become much alarmed. I lately had a patient at Cambridge to whom I gave iodide of potassium; he returned to college; this

discharge from the nose took place ; he confined himself to his room, kept his bed, sent to a surgeon in the town, who recommended him to continue my prescription, under the supposition that he was laboring under severe cold, with pain in the head. As my patient did not get any better, he came to town to consult me. I at once explained to him that this was not a very unusual, although a very unpleasant occurrence ; the iodide was left off for a few days, purgatives given, and my patient immediately got well.

Sometimes this remedy will play off these vagaries on the eye, which will become injected ; the redness, however, is confined to the conjunctiva, the deeper tunics remaining unaffected ; sometimes the side of the face will swell ; the only treatment required is to leave off the treatment for a few days, give purgatives, and then after that interval return again gradually to the former dose. Such complications never deter me from again having recourse to the remedy if I find indications for it. In some instances I have remarked iodide of potassium producing a hot skin, a parched mouth, and some fever, or we observe acne on the back or face, accompanied with some headache ; in other cases, an unusual quantity of saliva is secreted, the gums become puffy, and bleed when the tooth-brush is used. Ecchymosis and purpura in the inferior extremities are observed when the salt has been taken for a considerable space of time. Iodide of potassium has likewise an anti-plastic action, or a tendency to liquefy the blood. It may likewise produce excitement of the nervous centres, with a little uncertainty of the movements and in the intelligence. These effects should induce the surgeon to omit altogether, or reduce the dose, which may again be resumed when these prejudicial results have ceased. I now never prescribe this remedy without telling my patient that this simple salt will occasionally produce these consequences, and request him not to be alarmed if they occur, but send for advice, and explain what remedy he is taking.

Modus Operandi of the Remedy.—The late Dr. Williams believed that "iodine has an affinity for the syphilitic poison, which it modifies and deprives of a part of its power to inflict disease. The iodide of potassium is probably absorbed in substance, and so rapidly, that iodine may often be detected in the urine within ten minutes after the patient has swallowed it. It is found also in the saliva, in the tears, in the milk, and, probably, in the other secretions of the body ; but it has not been satisfactorily demonstrated in the blood, being either so rapidly removed as to exist only in quantities too minute for detection, or else, perhaps, resolved into its elements. The best test for the iodide of potassium in the urine, is first to add a solution of starch, and then a small quantity of the solution of chlorine, this latter agent immediately setting free the iodine, producing the usual beautiful violet or indigo tint."—*Elements of Medicine*, vol. ii., pp. 167, 168.

When to be left off.—This remedy may be continued an almost indefinite length of time without producing any ill consequences ; in fact the more the remedy is required the better it is borne ; under it the symptoms disappear, the patient grows quite fat and recovers a state of health he has been a stranger to for many years. In these instances I continue the remedy for a month or six weeks after the disappearance of all the symptoms, and in cases of relapses I have again recourse to it, or continue it with doses of mercury proportioned to the severity of the complaint.

Although I have given iodide in large doses, and for long periods, I have never yet seen atrophy of the testes, or diminution of the virile power ; on the contrary, this very inclination, which ill health has suspended for the time, returns in its full vigor as the body recovers its former healthy condition ; nor have I ever witnessed any effect on the mammary gland in women, as some authors affirmed on the first introduction into practice of the remedy.

SECTION II.

Having passed in review the symptoms, diagnosis, and treatment of tertiary symptoms generally, I shall now briefly allude to the more frequent individual forms, and say a few words on their appropriate treatment.

AFFECTION OF THE SKIN WITH SYPHILITIC TUBERCLES.

"Syphilitic tubercle is a symptom," says Ricord, "which makes its appearance toward the decline of the very latest eruptions, and is seated in the substance of the skin; it looks very much as if the tubercle were attached to the inner surface of the integuments, and projected from within; it has much tendency to involve the sub-cutaneous cellular tissue. This tubercle may remain perfectly dry, and cause merely desquamation of the epidermis, or it may turn into a pustule, and take the form of ecthyma or rupia. Suppuration being once thoroughly established within it, the tubercle breaks, the matter is freed, and a deep ulceration remains. The sore has generally very sharp margins, its bottom is pultaceous and yellowish gray, it is perfectly circumscribed, and it has all the characters of a primary chancre; so much so, that nothing but its inaptness to yield inoculable matter can distinguish it from the latter. These ulcerations may become serpiginous, and thus extend pretty far, but the phagedenic tendency is no longer the same; it is much less violent than in primary sores."—*Lancet*, vol. i., 1848, p. 437.

LOCAL TREATMENT.—It is unnecessary again to remind the reader that any inflammatory symptoms should be combated by antiphlogistic measures adapted to the condition of the patient; when all such have ceased, the tumor, if at its commencement, or even when fluctuation is perceptible (provided the skin has not become discolored), should be covered with a blister, and the denuded skin may then be dressed with a solution of iodine; this acts as a local irritant, and is far preferable to the solution of corrosive sublimate, as it may produce beneficial effects both locally and generally. Usually, after the first blister, the tumor will be sensibly diminished; in such cases let a second or third be made use of, until complete resolution is effected. We have seen no cases resist this method when they have been treated sufficiently early, and when the constitution has been supported by the general means spoken of above, for we repeat, this form of the affection principally occurs at a late stage, and in very unfavorable subjects. When, together with distinct fluctuation, there is discoloration of the skin over the tumor, it is useless to attempt this plan of resolution: the pus may be allowed to escape by puncture; and should the hard shell mentioned as surrounding the cyst be present, the cure will often be expedited by its excision. When called upon to treat those cases which assume at a later period a fistulous character, and are surrounded with an indurated margin, their local appearance may be benefited by covering the surface with the following application:—

Honey	12 parts;
Protiodide of mercury	1 part.

The same effects will be obtained if the margin of the ulcer be touched with the solution of iodine, which is thus composed:—

Tincture of iodine	3 ii.
Distilled water	3 viii.

The latter preparation is particularly useful in cases where no induration exists. These chronic ulcerations will slowly cicatrize, and their edges rise to

the level of the surrounding skin. This may be often hastened by the application of strips of the plaster of ammoniacum and mercury. An alternate treatment with *sedatives* and *stimulants* may likewise often be employed with advantage.

SYPHILITIC TUBERCLES IN MUCOUS MEMBRANES.

These affections may be best studied in the throat. In shattered constitutions, or in persons reduced by the combined effects of dissipation and bad treatment, some pain is felt in the throat or tongue; there is a thickness of the speech, which at first excites but little attention. On examining the affected parts, the medical man will not fail to observe more or less redness and swelling confined to a particular portion of the mucous membrane, as if a tubercle was forming in the sub-mucous cellular tissue: this point will soon take on an erysipelatous redness, break, and expose a tawny-colored slough. A probe will detect the extent of the ulceration, which, if situated on the back of the pharynx, may expose the bone, having previously destroyed the periosteum. When seated on the roof of the palate, a portion of the palate-bone will be found carious, and a communication to exist between the nose and mouth; the peculiar fetid smell will, moreover, convince the surgeon of the destruction of the bone, of which large portions often come away. The disease, however, does not seem confined to the mouth; in a great number of cases an erysipelatous redness and thickening is perceived at the root of the nose—not, however, larger than a shilling in circumference. These pursue the same course as on the palate, break, and expose the diseased bones. Not unfrequently, pustular eruptions, forming the scabs of rupia, appear on the extremities, and the general emaciation continues; the countenance has now a cadaverous appearance, and the pulse bespeaks the general feebleness of the patient, who, if not relieved by proper treatment, sinks under the combined effects of colliquative sweats, diarrhoea, great suppuration, and want of sleep from severe pain in the bones and joints, and loss of appetite. Such, I believe, is a concise sketch of the most frequent form of tertiary syphilitic tubercular sore throat, with its accompanying symptoms, not to be mistaken when once witnessed.

In other cases the patient perceives little lumps gradually form in the substance of the tongue, which becomes irregular on its surface. To the feel, these little tumors are very hard and elastic, varying in size from that of a pea to a hazel-nut. At first chronic in their progress, these masses become soft, suppurate, and open by fissures. The edges are often everted and indurated; livid chasms run in a perpendicular or transverse direction on the tongue, which is covered with a viscid secretion. The organ is very much fettered in its movements from its increase in size, and deglutition and articulation are interfered with.

Now, although one or other of these forms may be found alone as above described, cases are met with in which they occur together. More frequently, however, one form predominates, thus showing that they are varieties of one and the same stage of syphilis—a fact which I shall not further attempt to prove.

DIAGNOSIS.—Few of my readers will be at a loss to distinguish between a primary sore on the mouth or throat, and the affection I am now describing, as inoculation and the history of the two complaints will assist them. If, however, phagedæna or inflammation attack the throat, the distinction will for the moment be difficult.

When the mouth or throat presents the superficial excoriated condition of the mucous membrane (alluded to at page 352), which ultimately becomes extensively but not deeply ulcerated; when this character has been preceded

by a chancre for some two or three months, and is attended with the scaly or tubercular papular eruption, together with condylomata on the scrotum or vulva, and little impairment of the general health, the surgeon will not, I should think, have much difficulty in distinguishing this as a syphilitic affection, and will justly style it the *secondary* form of sore-throat.

If, on the other hand, the disease, commencing in the sub-mucous cellular tissue, periosteum, or bony structure, ultimately destroys the mucous membrane of the mouth or throat, giving rise to a deep, excavated, tawny ulceration, or if tubercles form in the substance of the tongue, which cause rents and ugly transverse fissures in that organ; if, moreover, some two years have elapsed since the occurrence of the primary sores; and if, together with the above symptoms, rupia and ill-conditioned sores occur on the extremities, together with an impaired condition of the general health, the practitioner will be in no doubt as to the nature of such an affection, and I think he will with me call it a *tertiary syphilitic affection*.

The diagnosis between this form of tertiary syphilitic affection of the throat and scrofulous or scorbutic affections is not, however, so easy. The history of the case proves little; the present appearance of the sore-throat affords us only slight indications, and we must be guided by the circumstances of each individual case, as no general rules can be laid down.

The tubercles in the substance of the tongue may be, and have been, mistaken for cancer of that organ. The following indications may assist the young practitioner in his diagnosis: Previous to ulceration of the tubercles, I have noticed that the *number* and *position* of the indurated points are different in the two afflictions. Thus, in cancer there is usually but one; in syphilis there are several. In cancer, the disease is seated at the side of the tongue, close to the teeth, about opposite the first molar; in syphilis, it is the dorsum of the tongue which is generally affected.

The same rule has been observed when the affection takes on an ulcerative character; then the characteristic features of the two complaints become more marked. In syphilitic affections, the ulceration is covered with a dirty, foul secretion, and the glands in the neck are but slightly swollen. In cancerous afflictions the ulcers are clean, florid, looking as if they were about to throw out healthy granulations; yet weeks and months go on, and no restorative process is set up, and the glands in the neighborhood become of that stony hardness so peculiar to cancer. I have been able to place but little confidence in the general appearance of the patient, for in both afflictions a yellow, cadaverous look is met with.

The cautious surgeon will, however, not readily give an opinion until he has commenced the treatment: it is the best means of diagnosis, for I need not say that the one can be only palliated. Happily, surgery can triumph over the other.

TREATMENT.—The indications of treatment are few, and must present themselves at once to the mind of the reader from what has preceded. In the first place, every exciting cause must be removed which can in any way aggravate the complaint. In public practice, no sooner does the patient enter an hospital, than the effects of a warm bed, nutritious diet, and abstinence from spirituous liquors, at once suffice to relieve many of the symptoms. The surgeon's next object is to reduce the local irritation. For this purpose, a sedative mucilaginous gargle is very useful, together with a few leeches applied to the angles of the jaws, if the condition of the patient allow it. Small doses of morphia will tend greatly to quiet that general irritability of system so frequently found combined with ulcerations of the throat; at the same time tonics, particularly the vegetable ones, with good, nutritious, unstimulating food, will be most efficacious. As the contact of the teeth with the ulcerating surfaces is very preju-

dicial, a layer of lead, such as is used by grocers, may be employed as a protective means; and it will be often necessary to attend to the state of the gums and teeth, for the tartar accumulated around them causes great local irritation. On the first symptoms of the appearance of suppuration, the cyst should be at once opened, and treated by emollient gargles.

When all these preparatory steps have been taken, the surgeon may commence the employment of that valuable remedy, the hydriodate of potash, in the manner spoken of under the head of Treatment of Tertiary Symptoms. Its first effect is to increase all the secretions, and the appetite is not the last to receive an impulse from this salt. Its principal action, however, is on the ulcerations; the secretion is first checked, then altogether stopped. Healthy granulations spring up in the centre of what was lately a slough, and often require to be repressed by the nitrate of silver. In some of the more chronic cases a local stimulant is necessary; a gargle composed of iodine and water, in the proportions of one scruple to eight ounces of water, is often all that is required, or the edges of the ulcer may be touched with the tincture of iodine. The appearance of the throat after cicatrization is very curious: bridles of a thick mucous membrane, of a peculiar *mother-of-pearl* white, are seen running in different directions, which differ much from the surrounding mucous membrane. To the uninitiated these white bridles look like so many patches of lymph, and I have often wished to remove them with a probe, so convinced was I that a mere layer of lymph was seated there.

This is the usual rapid progress of the cure. Examples, however, occur which cause the surgeon to despair: the local irritation does not diminish, and no attempt at cicatrization is observed. In such cases the presence of a portion of dead bone may be anticipated, and can usually be detected by a probe. As long as this remains, it must cause mischief. It should be removed with caution as soon as it can be detached; for however efficacious the hydriodate of potash may be, it can not produce absorption of a dead portion of bone; it is the forceps of the surgeon which most quickly gets rid of it, and the case will go on prosperously afterward.

When complete cicatrization has occurred, the deformity that remains is often considerable, though not to such an extent as may have been expected. The speech of the patient is not distinct, in consequence of those bridles of mucous membrane above spoken of; and if a communication exist between the palate and nose, that peculiar nasal twang betrays the nature of the accident. These are permanent defects that medicine can not cure; but various mechanical contrivances, called obturators, may be employed with considerable success.

As regards any operation for the purpose of bringing the sides of these fissures together, it should never be sanctioned; the tissues around are not highly organized, and union by the first intention will not take place. The knife detects a lardaceous substance, which readily sloughs; so that all rhinoplastic operations are now given up, more especially as great relief may be obtained from the obturators. It must not be forgotten, however, that as foreign substances they may produce great irritation, and will require to be left off.

TERTIARY SYPHILITIC AFFECTIONS OF THE LUNGS.

Many authors, particularly Morton, Sauvage, Portal, Morgagni, and, more recently, Drs. Graves, Stokes, and Munk, have related cases and described diseases which they have classed under the term "syphilitic pulmonary disease." The latter of these authors observes, "Syphilis displays itself in the lung, under the varied forms of bronchitis, pneumonia, or broncho-pneumonia." —*Medical Gazette*, 1841; p. 182.

Dr. Stokes says (page 93): "With respect to the bronchial system, we may observe the disease as an acute or more chronic affection. In the first instance it is analogous to the bronchial irritation of the exanthemata, of which I have seen a few interesting examples, while in the second there is a chronic irritation, which, when combined with the syphilitic hectic, and with periostitis of the chest, closely resembles true pulmonary phthisis. In the first of these cases I have observed that, after a period from the first contamination, the duration of which has not been determined, the patient falls into a feverish state, and presents the symptoms and signs of an irritation of the bronchial membrane. These having continued for a few days, a copious eruption of a brownish-red color makes its appearance on the skin, and the internal affection either altogether subsides or becomes singularly lessened. Here we see the bronchial membrane taking on action which is peculiar, and very different from its ordinary irritations. There is an inflammation only analogous to that of the exanthemata, and no doubt can exist that it is connected with the syphilitic poison. My friend Dr. Byrne, whose situation as medical officer of the Lock hospital, gives him the greatest opportunities of observation, informs me that he has in many instances seen patients who had been formerly diseased, and who had come into hospital either for new sores or for gonorrhœa, attacked with intense bronchitis and fever. This attack would come on suddenly, and the distress was so great that bleeding had to be performed, the effect of which was, that soon after, a copious eruption, often combining the lichenous and squamous forms, made its appearance, with complete relief to the chest. In some of these patients, on the day before the eruption, the stethoscopic signs had been those of the most intense mucous irritation, and yet when the skin-disease appeared, *the respiration became either perfectly pure, or only mixed with an occasional rhonchus in the large tubes.* The same gentleman has observed the reverse of this; as, when a syphilitic eruption has been repressed, the bronchial membrane has become much engaged, and the patient affected with general febrile symptoms. These phenomena subsided soon after bleeding and mild diaphoretics, which had the effect of restoring the cutaneous eruption. Here we have an additional evidence in favor of the analogy between syphilitic bronchitis and that of the exanthemata."—*Diseases of the Chest*, p. 93.

Dr. Munk says: "The chronic form of the complaint is in all respects the most interesting and the most important. It is the most usual form under which syphilitic bronchitis presents itself; and, when combined with some other morbid conditions often consequent upon the existence of the syphilitic poison in the system, is exceedingly likely to be mistaken for true phthisis, and thus to lead to an unnecessarily bad prognosis, and to be both incorrectly and inefficiently treated.

"As secondary symptoms in general may show themselves at very different periods from the primary contamination, so may chronic syphilitic bronchitis originate at short or distant intervals from the original attack. Its order of occurrence, in relation to other secondary phenomena, can not, I believe, in the present state of our knowledge, be positively indicated: but the observations I have hitherto made tend to show that it is most usually observed late in the series. I have known it take precedence of the affection of the throat; but far more frequently it succeeds to this, the morbid action creeping gradually and slowly along the larynx and trachea into the bronchial tubes. In such cases the attack presents many of the phenomena, and follows much the same course, as common catarrh."—*Loc. cit.*, pp. 182, 218.

Dr. Graves, addressing his pupils of the Meath hospital, on the subject of syphilitic pulmonary disease, asks: "How are you to recognise it? Mainly by the history of the disease. If the patient's sufferings have commenced at a period of time after primary sores on the genitals, when secondary symptoms

usually make their appearance; if some of his complaints are clearly traceable to this source; if, along with debility, night-sweats, emaciation, nervous irritability, and broken rest at night, we find cough; and if this group of symptoms have associated themselves with others, evidently syphilitic, such as periostitis, sore-throat, and eruption on the skin, then may we with confidence refer all to the same origin, and may look upon the patient as laboring under a syphilitic cachexy affecting the lungs as well as the other parts.

"We must not draw our conclusion until we have repeatedly examined the chest by auscultation and percussion; if these fail to detect any tangible signs of tubercles, we may then proceed to act upon our decision with greater confidence, and may advise a sufficient, but cautious, use of mercury."

My own observations on large numbers of syphilitic patients suffering under secondary symptoms, in no way corroborate these opinions. I am unaware of having observed cases of acute bronchitis or pneumonia coming on during the course of secondary symptoms. That these affections may occasionally complicate the above complaints, no doubt can exist, but they do not appear to bear the relation of cause and effect; in fact, during the existence of secondary symptoms, fever, or affection of the chest, is absent in ninety-nine out of every hundred cases of secondary symptoms. Surely, did they exist, they must have been noticed by M. Ricord, and the accurate observers that have studied syphilis in all its stages.

During my late visit to Paris I was present at a lecture of M. Ricord's on the subject of syphilitic phthisis. The professor of the Hôpital du Midi admits the existence of this disease, but not in the sense that the authorities quoted above do.* Syphilis, he thinks, does produce phthisis: "but," said he, carried away by his subject, as he often becomes in his lectures, "syphilis is the spur, and mercury is the whip, which hurries along the phthisical to their graves."

Look in the hospitals, where phthisis is treated, and ferret out the cases which are complicated with syphilis. "The first instance met with," added M. Ricord, "was the following, in which my judgment was for some time at fault. A watchmaker was seized with the symptoms of phthisis, pain, fever, cough, sweating, expectoration, attended with the auscultatory symptoms of tubercles; and I was induced to think it was a case of phthisis; but recollecting that here was a man in the prime of life, with no hereditary tendency to phthisis, suddenly seized with all the symptoms of that disease, a circumstance most unusual, and remembering that he had been treated for disease of the tibia, and that I had removed a testicle formerly, in the belief that it was cancerous, because it did not yield to mercury (this was before iodide of potassium had come into vogue), together with other tertiary symptoms, I thought I ought to employ the iodide; and now the patient is fat and strong, and instead of being sent to Italy, was allowed to remain, with his remedy in his dear Paris; but," says Ricord, in his peculiar serio-comic manner, "the phantom of that testicle I removed haunts me sometimes, and I now make a clean breast of it, and hope by confession to exorcise the evil spirit; but profit by my faults, and work out these hints which I give you."

To return, however, to syphilitic phthisis, no doubt can exist that at late periods of tertiary symptoms when gummatous and syphilitic tubercles are forming in the cellular tissue, similar deposits may take place in the lungs, and suppuration ensue, giving rise to all the symptoms of a cavity. In a lecture reported in "The Lancet," vol. i., 1848, M. Ricord says: "And here I must solemnly warn you not to confound the suppuration of a few syphilitic tubercles in the lungs

* Dr. Stokes says (p. 432): "Secondary syphilis simulates phthisis when the syphilitic hectic exists with the bronchial irritation which I have described. If, as is often the case, there be also periostitis of the ribs or sternum, the symptoms are almost identical."

with phthisis. In the latter disease I need not tell you what fate awaits the unfortunate sufferers; whereas, the cure in the syphilitic affection is extremely probable, and the prognosis is anything but gloomy. You will be able to distinguish these affections by the history of the disease, the actual cutaneous manifestations, or even by the treatment."

Dr. McCarthy, in his Thesis says: "These tumors may be situated in the lung, as I witnessed in a fatal case. The softening and elimination of the syphilitic tubercle give rise to the stethoscopic signs of pulmonary phthisis, and the functional symptoms resemble those produced by insufficient respiration."—
Page 39.

M. Ricord relates the following appearances, as found in the lungs of the patient whose disease proved fatal, and is delineated in Plate XXVIII. of his *Clinique Iconographique* :—

"The lungs presented on their lateral and posterior surfaces, violet-colored stains, beneath which were indurated kernels, which, on first looking at them, resembled those little masses of pneumonia which are found in the lung from purulent absorption.

"No pus was found in any of these masses, which, when divided, had the appearance of a dark red tissue easily broken. In the left lung we observed five little foci or caverns, half filled with a whitish viscous matter, as well as a grayish pulmaceous secretion, which appeared to come from the walls of the foci, and these last were soft and of a gray color. The largest of these might be able to contain a small nut. They were situated close one to the other in the inferior portion, and close to the external border of the lung."

In the explanation of Plate XXIX., Ricord says: "The lungs which were healthy at their upper part, presented at their base several tubercular ulcerations as large as peas, and altogether analogous to those found in the heart, constituted of a yellow matter, hard, creaking under the edge of the bistoury, without any vascularity, of a schirrous consistence in some parts, and in others resembling tubercular matter which is becoming softened. In one word, we found all the characters of the gumma, nodus, or syphilitic tubercle—tertiary symptoms so often observed in the sub-cutaneous and sub-mucous cellular tissue."

These cases, then, differ from syphilitic phthisis, but are often confounded with it.

It has often been stated that syphilis produces consumption; I think it might be said, with a great deal more truth, that the consumptive individual presents the most severe cases of syphilis; still I am ready to admit, that when syphilis occurs in delicate persons, it may develop the seeds of scrofula, and in this it will be aided by the injudicious effects of mercury. I must, however, continue to believe that the influence of syphilis in producing phthisis is much overrated, and in this opinion I am borne out by the returns of the registrar-general. I have been at some pains to collect all the cases mentioned in the weekly reports in which the immediate cause of death was consumption with syphilis, and during the space of the three years, 1846-'48, they amounted to only ten males and nine females.

In regard to *treatment*, little need be said. When we have reason to suspect the existence of syphilitic tubercles in the lungs, recourse should be had to iodide of potassium, and mercury must be used most sparingly. When we have to treat true syphilitic phthisis, the surgeon should treat the patient on general principles, and, notwithstanding the high position of Dr. Graves, I dissent from his recommendation of giving mercury, which I believe must be generally prejudicial. In the stage we are describing, iodide of potassium will do much, and I have great confidence in cod-liver oil, but some very peculiar circumstances must arise to allow me to sanction the use of mercury, and it would be only

after the failure of all other means that I should recommend the mineral. There is a case, however, detailed under the head of syphilitic cachexia (page 401), showing that minute doses of corrosive sublimate may be of great service.

GUMMATA, OR TUBERCLES IN THE CELLULAR TISSUE.

M. Ricord says: "Tertiary syphilis often produces another alteration which bears to plastic degeneration the same relation as suppurative syphilitic eruptions bear to dry ones, I mean—namely, the elastic tumor, or the tubercle of the cellular tissue. These tumors may spring up wherever there is cellular tissue, be the latter sub-cutaneous or sub-mucous; and they have been found wherever areolar tissue exists. They may develop themselves around the cord, between the epididymis and the testicle; in short, in all the cellular elements of the liver, lungs, brain, testicle, &c."

"EVOLUTION AND PROGRESS.—The elastic tumor, yielding to the hand a sensation as if it were filled with gum, is an essentially tertiary accident; it never appears before the fifth month after contagion, which is the primary cause of the tertiary affection; but it may also come on thirty or forty years afterward. It mostly begins with a hard kernel, of a small size, situated in the deeper layers of the skin; it grows very slowly, so much so, that I am not quite sure of the size which it may reach; but this development takes place without any local or general reaction, and in the cases I have observed, the tumor seldom went beyond the size of a walnut, and mostly remained much below it. These tubercles or elastic tumors are not confluent, and this fact is sufficient to establish a distinction between them and molluscum, which, generally, is remarkably confluent. When it settles in the testicle, it is mostly solitary, all the surrounding parts remaining perfectly sound. I have found such tumors in the brain, and M. Cullérier has reported a case where this organ was similarly affected. The disease, when situated in the lungs, has, perhaps, more tendency to the deposition of numerous tubercles of this kind. When an elastic tumor is left to itself, or treated by mercury, it will inevitably suppurate; and before the use of the iodide of potassium was introduced, it was looked upon as incurable. Thus, M. Cullérier always advised the cauterization of such tumors, and I was in the habit of advocating their removal with the knife. As the syphilitic tubercle grows, it becomes rather painful; this is almost always owing to inflammatory action set up within it: before this complication occurs it lies quite free in the cellular tissue, and adheres to the skin only at one point; but when inflammation sets in it gets confounded with the surrounding tissues, its mobility is lost, the skin covering it becomes red, swells, softens, and ulcerates, on one or several spots, and a deep ulcer follows the plenteous discharge of purulent matter. The edges of the sore get undermined, and the neighboring parts are involved in a destruction which varies according to the organs whereon the tumor has settled. It would be impossible for me to give you an account of all these lesions, as they affect every one of the viscera. I will just attempt a sketch of the state of the *larynx* when thus attacked. The first symptoms are, in such a case, a gradual difficulty of phonation, which may go so far as to produce a total extinction of voice; but when suppuration comes on we have all the consequences of chronic laryngitis, and even of phthisis laryngea—viz., purulent or muco-purulent expectoration, dysphonia, or total aphonia, the detachment and expectoration of the bones, or cartilages of the larynx, and the occurrence of aerial fistulæ. But those symptoms, which apparently are extremely serious at the very outset, are far less important than they become toward the last; for at the beginning the dysphonia and aphonia are merely symptoms of compression or obstruction; and since a judicious treatment can modify this state of things without any loss of substance taking place, the organ

may regain its normal vigor. But when the disease has made further progress, the phenomena then perceptible are the result of the destruction of several parts of the larynx; the treatment then can promote the healing up of the ulcers, but can not restore the parts of the organ which have been loosened and expectorated. I must not omit to point out that the heart also may, at the beginning, be affected with signs of compression or congestion; and it may happen that, these being neglected, suppuration of the organ will ensue. I have dwelt principally on the larynx, heart, and lungs, but all other organs may be affected in the same way."—*Lancet*, vol. i., 1848.

SYPHILITIC TUBERCLES OR GUMMATA IN MUSCLES.

In a recent lecture, reported in the "Lancet," M. Ricord makes the following observations: "As soon as this syphilitic degeneration begins, the muscular tissue, which seems to undergo a sort of coagulation, contracts; but this contraction is hardly noticeable as long as the muscle gets passively shorter. The phenomena which I have pointed out, as marking this affection in the testicle, reappear in such a case. There is first a simple plastic degeneration, which may, by proper treatment, entirely disappear, without any sort of deformity being left behind; but if the disease is allowed to reach a more advanced stage, the result may be either a complete atrophy, through resorption, or a fibrous, fibro-cartilaginous, or osseous transformation. In the latter of these two cases there is shortening of the affected muscle. This degeneration generally attacks the flexor muscles, as, for instance, the biceps, &c. We have now an example in the house, where this plastic alteration is situated in the anterior part of the leg, causing a flexion of the foot; I have also observed the same affection in the gastrocnemii. I remember a celebrated singer, who consulted me for such a syphilitic contraction of the biceps, which interfered with the proper action of his arms on the stage. He was put on the iodide of potassium, and progressed very nicely, so much so that resolutions gradually ensued; and while the public were applauding his splendid vocal feats, I used to join them enthusiastically, enraptured as I was with the vigorous action of the arms and the triumph of the iodide.

"This complaint is not painful at all, and the patients become aware of it merely by the difficulty they experience in performing the different motions of the limbs. I have seen, in the course of my practice, cases of complete atrophy of the flexor muscles of both legs. Since I have called the attention of the profession to this pathological alteration, a work has been published by M. Bouisson, of Montpellier, upon these plastic degenerations of muscles, consequent upon tertiary syphilis, for which no small praise is due to him."—*Lancet*, vol. i., 1848.

My reader will find a drawing of these deposits in Plate XXIX. of Ricord's "Iconographique," as he met with them in the substance of the heart: "The walls of the ventricles presented in many places a tubercular-looking yellow matter, creaking when divided, without vascularity, of a scirrhouss consistence in some points, and in others analogous in appearance to tuberculous matter undergoing softening. In a word, we find all the characters of nodes or syphilitic tubercles, tertiary symptoms, which we often observe in the sub-cutaneous and sub-mucous cellular tissue.

"Surrounding the whole of these morbid productions, we did not remark any pushing aside of the muscular fibres, for the muscular fibre itself had degenerated into this substance. We could, in fact, trace the evolution of this transformation, which seemed to have commenced by the blood combining with the fleshy fibre. In fact, the lesion still existed in that state in several points. In others it presented a yellow color, and had acquired a greater development in

the centre, but at the circumference we detected the combination of blood with the fibre, which had been the origin of the complaint."

I have witnessed several cases in London of these tumors in muscles, particularly in the biceps; one such was lately under treatment in St. Bartholomew's hospital. During my recent visit to Paris, I was fortunate enough to see a good specimen of tubercle or gummata in muscle. The history of the case is as follows: eight years ago a man contracted chancre, which did not become indurated; two years later, that is, six years since, he had a second infection; induration came on, he remained free from disease until two months ago, when a tubercle formed in the masseter, and another in the substance of the gastrocnemius; the limb became enormously enlarged, but had entirely subsided under the use of iodide of potassium, with plasters of ammoniacum and mercury; the cheek is quite well, but the masseter has not yet entirely recovered its action.

TERTIARY AFFECTIONS OF THE FIBROUS TISSUES.

I may mention that sometimes the fibrous tissue of the penis undergoes a peculiar change from the influence of tertiary symptoms. Some part or parts become indurated and hypertrophied, the organ assumes an odd shape, and cancer might be suspected, erections become very painful and give the patient great uneasiness; this state of the organ often depends upon infiltration of plastic matter into its fibrous tissue, and iodide of potassium should be employed, as well as local applications, to cause absorption of the foreign matter.

I lately saw an elderly man who had suffered from repeated attacks of syphilis in almost all its forms; he subsequently complained of a swelling in the penis, and, after much pain and suffering, shreds of lymph came away by the urethra, and a sanguous thick discharge continued for a length of time, and in profuse abundance. The supposition was, that the patient suffered from chancre in the urethra; but my opinion, given at the time, was that this patient labored under syphilitic degeneration of the fibrous tissues of the penis. I never saw the patient afterward, and am unable to give the result of the case.

I was in correspondence lately with Mr. Horniblow, of Leamington, about a patient, who probably suffered from one of the forms of this affection; and I have reason to think them far more common than they are usually supposed.

Pearson has the following observations on disease of the corpora cavernosa: "Sometimes after the healing of a chancre, a certain number of the cells of the corpora cavernosa become eroded, by which the penis is bent or curved during erection. If the cells be destroyed, there is no cure; but the curvature often arises from slow inflammation, then the part is hard, dense, and almost incompressible; the blood has not a free admission, and probably the cells are frequently obliterated or filled with some fluids.

" Sometimes the upper part is affected, and then the penis becomes curved upward; at other times the corpus spongiosum is destroyed, and this case admits of no relief. These are not merely the effects of venereal virus, since they occur to married people who have had no venereal affection. The whole of one corpus spongiosum has been so affected as to prevent sexual intercourse. We have cured some such cases by occasional purgations and frictions with ung. hyd. and camphor on the part, for five or six months. In one instance the patient said he had a discharge of bloody matter into the urethra, and was sensibly relieved by it. Soap plaster is useful in such cases."—*Pearson's Manuscript Lectures*, page 104.

Civiale says: "In addition to the effects of catheters, above spoken of there is one which I have discovered only recently, and yet it deserves attention. Catheters kept permanently in the bladder, often cause the disappearance of

those swellings of the corpora cavernosa, and hardness of the penis with or without stricture, which complicate the various affections of the genito-urinary system, and render their treatment very difficult."—*Civiale sur les Mal. Genito-Urinar.*, page 221, vol. i.

TERTIARY AFFECTIONS OF THE OSSEOUS SYSTEM.

M. Ricord says: "The first phenomena which raise a suspicion that such lesions have taken place, are the characteristic tertiary pains in the bones, which are widely different from the rheumatic pains of the second syphilitic period. These pains are very tardy, and generally have their seat on those points which are subsequently to become involved in organic lesions; they mostly occur on the following bones: internal and anterior part of the tibia, cranium, clavicle, the ulna, almost through its whole length, the lower part of the radius, either the superior or inferior part of the fibula, inferior maxilla, metacarpus, and metatarsus, malar bones (rarely), vertebræ, nasal fossæ (often). The humerus, femur, and pelvis, are mostly exempted, but it is not rare to see the ribs affected. Although such pains may be looked upon as constituting *per se* manifestations of tertiary syphilis, and their origin is sufficiently clear, still they are so intimately linked with other lesions, that the study of their aetiology in an especial manner will, I think, be useful. These symptoms were hardly described before the fifteenth century, either as denoting latent lesions, or as being of syphilitic origin. This shows evidently that they passed unnoticed; but we may, of course, admit that they existed before the fifteenth century, and we can only account for their not being mentioned, by supposing that attention was not directed toward them. It has long been held that these pains were the effect of mercury; but to prove this assertion to be untrue, you need but recollect that they were described during the epidemic of the fifteenth century—a period when mercury was not used for diseases affecting the system at large. And to make this still more evident, it may be added, that at the time when mercury was laid aside for a milder treatment (which did not happen many years ago), I have watched patients through the whole series of secondary symptoms, and seen them get at last affected with the tertiary pains in the bones. Some people have also attributed the pains in the bones to mercury and syphilis combined; but here again we must notice that a well-regulated external application of mercury is very likely to prevent those pains altogether."

"PECULIAR CHARACTERS.—The part affected neither changes in size, nor color, nor temperature. The pain arises without any exciting cause; it lies very deep, and is much excited and increased by pressure; whereas this same pressure has no effect on secondary rheumatic pains, except that it sometimes eases them. The tertiary osseous pains are fixed and circumscribed, whereas the rheumatic are more diffused and metastatic; they have, however, this in common, that they increase by the decubitus and by the heat of the bed; in fact, they are nocturnal; and I need not repeat how I understand this expression. If these osteocopes are allowed to proceed undisturbed, they will certainly end in an organic lesion of the part, while the secondary rheumatic pains, will after a certain time, disappear, without leaving any traces whatever.* The tertiary

* "From long-enduring rheumatic inflammation in any of the large joints, more especially in the hip, the cartilages are absorbed, and the bones become indurated, enlarged, and altered in form, probably from the pressure they have received in an early stage of the disease, when their texture was softened by inflammation; thus, the head of the femur becomes broad and flattened, and of irregular figure, with corresponding changes in the acetabulum. With induration of the articular ends of bones, their surfaces when deprived of cartilage, become smooth and polished, with a porcellaneous appearance, owing to the Haversian canals becoming filled with earthy substance." (Microscopic Observations, by Mr. Quekett, of the Royal College of Surgeons.)—*Stanley on the Bones*, p. 25.

"While rheumatic inflammation occasions general enlargement of the shafts of bone, syphilitic inflammation in the periosteum gives rise to circumscribed swelling of the bones, or nodes."—*Loc. cit.*, p. 25.

pains are incipiently intermittent and nocturnal ; they soon, however, make their appearance during the day, at first but slightly, and then gradually torment the patient day and night, and produce other accidents.

" It will now be useful to inquire how long they may last without bringing on organic lesions. I can deduce from my experience and the practice of others, that these pains may extend over as long a period as two years without any lesion of the osseous textures ; this, however, may be looked upon as the exception, the rule is, that osteocopes which last, unchecked, for six months, will very probably produce troublesome alterations in the osseous tissues. The lesion is first situated in the periosteum, and it may be said that periostitis is much more frequent than exostosis. This affection of the periosteum, which is called *nodes*, may be divided into three varieties : the elastic, the phlegmonous, and the plastic. The first of these presents a tumor with an immovable base ; it is more or less circumscribed, of a circular shape, and the integuments, which easily glide over it, are not changed in color or temperature. You, doubtless, remember that elastic tumors unconnected with bone adhere, on the contrary, to the inner surface of the skin, are very moveable, and may be easily isolated by making pressure behind them, in all of which particulars they differ from the first variety of nodes. The latter, moreover, are preceded by osteocopes, but there is no pain before the appearance of the cutaneous tumor ; none, in fact, is experienced until suppuration comes on. These doughy or elastic nodes (they give the hand the sensation of confined gum), are the result of the effusion of a thickish fluid under the periosteum ; they are generally painless, fluctuating, and tend to resolution ; this variety is the most easy of cure, and the least painful. The phlegmonous nodes (second variety) are preceded by inflammatory action ; they give exquisite pain, and mostly suppurate ; the purulent matter accumulates between the bone and periosteum ; both the premonitory pain, and that which follows the complete development of the affection, are extremely severe : the integuments turn red, become hot, and adherent ; and an abscess speedily forms. The plastic nodes (third variety) begin like the doughy or elastic, but are a little more painful ; the skin remains unaffected ; the tumor is at first fluctuating, afterward, however, it acquires a little consistency, gets gradually hard, passes through the different stages of plastic saccule, and at last emerges into ossification and eburnation. This is a species of exostosis resembling an epiphysis, and this leads us naturally to the study of exostoses.

" You are aware that in general pathology two kinds are admitted, one being an exostosis growing as a sort of epiphysis ; the other, the parenchymatous exostosis. In the first kind, a plastic effusion occurs between the periosteum and the bone, or within the cells of the periosteum. The latter gets a little thickened, and shows a tendency to lose its connection with the bone, by the infiltration of the lymph in its intimate texture. This effused matter becomes thick, undergoes a fibrous transformation, and is converted into cartilage, which is the nidus wherein new bone is generated. It is within this cartilage that the calcareous matter which is to constitute the exostosis is deposited. The latter, thus adventitiously formed, may be generated within the substance of the periosteum, and be separated from the bone by a layer of the osseous investment just named ; or else it may rest directly on the bone itself. The latter, if the disease be confined to the periosteum, may remain perfectly healthy, although covered by this new formation ; but adhesions at length take place, and the bones become involved in the morbid process. It is probable that in such a case, the parenchymatous exostosis—viz., that generated by the bone itself—combines with the exostosis which has been shown to grow in the manner of an epiphysis. The latter variety is generally circumscribed, symmetrical, rarely multiple, and the skin which covers it, as well as the bone be-

low it, remains in a perfectly normal state. The surface is rarely uniform, mostly irregular, raised, knotty, and stalactiform. When these bony growths have once reached the state of eburnation, they give no more pain, and remain stationary. The parenchymatous exostosis (or second species) is much more rare than the periosteal variety; it is seated in the thickness of the bone, and is the result of regular ostitis. The inflammation is, however, circumscribed, and has no tendency to what is called hyperostosis, as is noticed in scrofula; it is, on the contrary, simple and well-defined. The compact portion of the bone is affected in this kind of exostosis, whereas the spongy texture suffers in struma. The osteocopes are here extremely severe, because the inflammation occupies a very compact fibrous texture, which circumstance gives rise to a sort of strangulating sensation. Swelling of the bone occurs, and a plentiful deposition of calcareous matter takes place within the tumor. Scarpa used to explain the mechanism of exostosis in such cases, by supposing that there was softening of the bone, resorption of the calcareous portion already present, and a deposite of new earthy matter after the absorption of the original calcareous constituent. I must say that there are no facts which prove the accuracy of this theory. The most generally received opinion is, that a certain divarication takes place in the fibrous meshes of the part, that a plastic effusion occurs in the intervals of the fibres, and that a deposition of calcareous matter afterward fills up these very intervals. This deposite of phosphate of lime becoming at length very large, and too bulky, gets finally atrophied, or else destroys the subjacent healthy structure, and remains stationary. This is the period of eburnation, or ivory exostosis.*

"**DIAGNOSIS OF STRUMA.**—You will do well to notice that syphilis may be combined with scrofula, the latter being either congenital or acquired in consequence of the syphilitic taint; it is clear that in such cases the manifestations will bear a double character, and it is of some importance to distinguish accurately the respective symptoms peculiar to each of these affections. Now just notice that scrofulous disease of the bones is almost painless at the beginning; that unpleasant sensations come on but very gradually, and that it is only in the very latest periods that pain becomes acute; while the very reverse happens with syphilitic osteitis, for at the closing period—namely, that of eburnation—the pain entirely disappears. Scrofula attacks very commonly the ends of bones, where the cancellated tissue is very abundant, whereas tertiary syphilis occupies the whole thickness of the compact texture. If the two diatheses are combined, the lesions do not affect the body of the long bones exclusively where there is much compact tissue, nor altogether the extremities or spongy texture of the same bones, but they are generally situated on intermediate points, which are then more or less near the middle or extremities of the bone, as syphilis or scrofula predominates. Thus may white-swelling be of a syphilitic nature. Therefore you see that the form, seat, or intensity of the manifestations you have to treat are not sufficient to establish the diagnosis; the present state and the accurate history of the case must be taken into account.

"**DIAGNOSIS OF SYPHILITIC ExOSTOSIS.**—Chronicity is the rule here, and an acute stage the exception; nor does the disease pursue a regular and steady course; its onset is, on the contrary, marked by intermittence; so that the regularity of progress, which has been looked upon as a pathognomonic sign of the affection, can not be depended on. This affection, if watched from the

* "The enlargement of bone with induration, is the effect of prolonged inflammation in its tissue; and, according to the observation of M. Paget, it appears that the lamellæ of the inflamed bone are first separated and its cells widened; and that the lamellæ become thickened, hardened, and consolidated together. As in the original formation of bone, its solidity is owing to the formation of osseous concentric laminae upon the insides of the Haversian canals, so, in disease, its induration is the effect of increased osseous formation within these canals, narrowing some of them, and obliterating others. Accordingly, indurated bone is less vascular and less oily than healthy bone, and in the microscope its vascular canals are found to be few and of small size."—Stanley on the Bones, p. 20.

very beginning, will be perceived to have a constant tendency to ossification and eburnation; but this termination is not actually unavoidable, for resolution may occur either spontaneously or by the assistance of art; and it is, in fact, not very difficult to bring it about, provided we are consulted early. Exostosis of a venereal nature may likewise terminate in suppuration, wheresoever its seat may happen to be; but this process occasions much less pain when the disease has attacked the cancellated structure of the bone, than when it affects the compact portion. In such cases there is complete destruction of the organic portion of the bone, and nothing but the calcareous constituents are left.

"Caries and Necrosis."*—Syphilitic osteitis sometimes ends in decided necrosis;† the disease then lasts until the sequestrum is thrown off. But you must here remark that certain portions of the osseous system are more predisposed than others to caries and necrosis of a syphilitic nature. First and foremost, are all the bones of the face; and, among those of the head, it is the ethmoid which is the most frequently attacked. The vomer is the bone the most frequently necrosed in tertiary syphilis; and this necrosis is brought about in two ways—first, by the destruction of the periosteum, caused by the presence of tertiary, sub-mucous tubercles; secondly, by the direct affection of the bone. In both cases, however, a sequestrum is formed, which is not long in being eliminated. When the vomer is necrosed, the nose falls in, the nares are turned directly forward, instead of looking downward, and the tip of the nose mounts upward. In secondary syphilis, a quite different part of the nose suffers—namely, the alæ—and they are frequently entirely destroyed after cicatrization; the tip of the nose then turns downward, and the organ becomes crooked. When the tertiary symptoms settle upon the vomer, the patient is seized with frequent nocturnal headaches and sharp pains at the root of the nose; these pains are generally much increased by pressure, but when the mischief is going on far back within the nose, pressure has no effect. Patients are then troubled with coryza, which resists all ordinary means; the secretion of the part be-

* "Caries exhibits in its progress the following phenomena: inflammation extending from the bone to its investing soft parts; these become swollen, thickened, and tender, and abscesses are formed in them, which contract into fistulous passages, leading to the diseased bone. The periosteum covering the diseased bone becomes thickened, very vascular, and readily separable from it. The bone at first is very vascular, then its cells become filled with a reddish-brown fluid, apparently a mixture of blood and pus, and occasionally mixed with oily particles. Absorption of the bone, but chiefly of its animal fat, ensues; that which remains is porous and fragile, and of a gray, brown, or black color, probably from decomposition of the matter within its cells; to which cause likewise the foetid odor of the matter discharged through the fistulous passages may be ascribed."—*Stanley on the Bones*, p. 52.

† Syphilitic ulceration of bone usually begins at many points, distinct yet close together, giving to the surface of the bone a worm-eaten appearance."—*Loc. cit.*, p. 59.

† Exfoliation or separation of the sequestrum is now found to take place in the following manner, when studied by means of the microscope: "When a portion of dead or dying bone is about to be separated from the living, the process which occurs," says Mr. Goodisir, "is essentially the same as that which has been described [in the account of the separation of a slough in soft parts]; the Haversian canals, which immediately bound the dead or dying bone, are enlarged contemporaneously with the filling of these cavities with a cellular growth. As this proceeds, contiguous canals are thrown into one another; at last the dead or dying bone is connected to the living by the cellular mass alone. It is now loose, and has become so in consequence of the cellular layer which surrounds it, presenting a free surface, and throwing off pus."—*Anatomical and Pathological Observations by John and Harry Goodisir*. Edinburgh, 1845.

Mr. Stanley thus describes syphilitic necrosis: "Syphilis produces its effects mostly upon the compact osseous texture, and in portions of bones which have thin, soft coverings, as the flat cranial bones, the front surface of the tibia, and the posterior border of the ulna near the olecranon. One of the modes of action of the syphilitic poison is to produce the immediate and complete death of the surface of bone it attacks. A circumscribed, puffy swelling then arises, as in the investing soft parts, and in the centre of this swelling an ulcerated hole speedily forms leading to the dead bone."—*Stanley on the Bones*, p. 76.

"Necrosis followed by reproduction in any of the flat bones is rare. In some of them it never occurs—for example, in the flat bones of the cranium, as would be expected from the consideration of the difference in the relations of the pericranium and dura mater to the cranial bones, from those of periosteum to other bones; the pericranium having no tendency to form new bone, and the dura mater having this tendency in a very limited degree: here, moreover, there is no stratum of soft vascular tissue to serve as the matrix of reproduction."—*Loc. cit.*, p. 114.

"It is doubtful whether any of the short cylindrical or irregularly-shaped bones are ever reproduced."—*Loc. cit.*, p. 115.

comes muco-purulent, and even altogether purulent.* The pus is thrown off from ulcerated surfaces, and often contains an osseous detritus; it exhales a very offensive smell, owing to the peculiar nature of the ulcerations, and likewise because it often remains stagnant for a long time. When the two nasal bones become attacked, we perceive the skin covering them turning red, and the tumefaction which ensues causes an ugly deformation of the part, which latter is extremely painful and very sensitive to the touch. Notice that the pain may, as is the case in secondary symptoms, be sharpest at night. The inflamed points yield a false and crepitating fluctuation, which indicates the presence of air in the cellular tissue; and this air may be looked upon as a sign of the perforation of the nasal bones. The frontal sinuses may be affected in the same manner, and occasion symptoms of a similar nature.

Tertiary Affections of the Lachrymal Apparatus.—When the lachrymal apparatus becomes affected in consequence of facial ostitis, the existence of which is concomitant with other tertiary accidents, there can be no doubt about the nature of the affection; but it sometimes happens that the ostitis occupies only that portion of the superior maxilla which gives support to the nasal duct, and then the pain may be very slight, and pass entirely unnoticed. The first symptom which attracts attention is an obstruction of the lachrymal sac, and a tumor about the inner canthus of the eye; and if the disease be not promptly arrested, it may end in caries of the bones. It is of vital importance accurately to ascertain the nature of the disease, for in tertiary syphilitic affections of the sac there is no need of operation, and setons or canulas would increase the mischief, and hasten caries and necrosis. Intra-orbital exostosis, or more frequently periorbititis, is also pretty often met with. The development of this affection is marked at the outset by symptoms which are more or less apparent, and they mostly end in exophthalmia. Some patients suffer from ambliopia, partial amaurosis, or complete blindness, before the eye protrudes. The periostosis is commonly situated on the roof of the orbit, projects from under the orbital arch, and has a tendency to depress the eye; if suppuration takes place, the destruction of the greater part of the upper lid is sure to follow, and the cicatrix which is left is sunk and sometimes very deep.

Palatine Ostitis.—This inflammation is very frequent, and passes through the stages which I have just described with reference to the nasal bones. It generally settles in the median line, and has its seat at the junction of the two halves of the palatine process of the superior maxilla. This medio-palatine ostitis, which is by no means rare, mostly terminates in suppuration; the mucous membrane is raised by a collection of pus beneath it; and the prominence which is the result of the suppuration has a fluctuating and crepitating feel; and when perforation of those bones takes places, it mostly proceeds from the nose into the mouth. This syphilitic ostitis often attacks the incisive alveoli in subjects with whom no serofulous complication exists; the sockets swell, the gums become vividly red, and puffed up; the two central incisors get loosened and longish; all the four incisors are soon involved in the mischief; and if no means be taken to stay the progress of the disease, the alveoli will lose their connection with the rest of the bone: they get as loose as the teeth themselves, and act at last as foreign bodies. The ordinary therapeutical means are powerless to arrest this destruction. The best practice is, to remove the detached portion of bone, so as to prevent the irritation which its presence is causing.

Bones of the Cranium.—Although these bones are almost completely formed of compact tissue, they are by no means exempt from tertiary syphilis, and any

* In cases of diagnosis of disease of the bones, the pus should be tested, as Mr. B. Cooper has shown that the secretion arising from diseased bones contains a large quantity of the solid constituents of bone in solution, which consequently pass off in these fluids.—*B. Cooper's Lectures, Medical Gazette, May, 1845.*

part of them may suffer. These cranial affections have mostly been observed to end in caries and necrosis, and very rarely in eburnation.* The symptoms are the same as those I have enumerated when describing the disease as affecting the nasal and palatine bones; with this difference, however, that an organ of the most vital importance lies in the immediate vicinity of the cranial bones. Allow me now to give you a comparative table illustrating the difference existing between syphilitic affections of the bones and the osseous lesions occurring in scrofula:—

Syphilitic Affections of Bone.

1. Very rare with young people.
2. Syphilitic history.
3. Compact texture of bones attacked.
4. Superficial part of the bone.
5. Little tendency to enlargement of bone.
6. The pains which precede the development of the affection increase and become very intense, until they decrease again—and entirely disappear in the later periods of the disease.
7. A tendency to circumscription.
8. Exostosis.
9. Tendency to ossification and eburnation, but very little to suppuration.
10. A chain of syphilitic symptoms, either concomitant or antecedent.
11. Rapid cure under appropriate treatment.

Syphilis may, however, be superadded to scrofula: we must then, in combating any lesion, endeavor to find out upon which of the two diatheses it is mostly dependent, and select our therapeutic means accordingly.

Action of the Osseous Affection on the Neighboring Parts.—Ostitis, and the subsequent exostosis, may, by their development, act upon parts and organs in their immediate vicinity, and thereby occasion symptoms of a very serious nature. I have mentioned already how the elastic tumors can act on the nervous centres, and I must here add that the affections of the bones act much more mischievously upon the same nervous centres than the tumors do. The pressure or irritation may be situated either on the origin of the nerves or on some point of the cerebro-spinal system. The symptoms are of course, extremely various. I have pretty frequently met with cases of syphilitic disease of the bones composing the orbit; and mydriasis, or dilatation of the pupil, was generally the consequence of the same. When the disease is situated at the base of the cranium, there is paralysis of the fifth pair: but the motor oculi may

* "It is remarkable, that while the pericranium in its structure and relations to the cranium differs in no respect from periosteum in its relations to other bones, yet that from the pericranium osseous deposits probably never arise." Accordingly, the cranial bones are not found enlarged by osseous deposits on their outer surfaces; their enlargement is mostly the effect of expansion with induration of their texture, but is in some instances the effect of osseous deposits on their internal surface."—Stanley on the Bones, p. 25.

* The osseous deposits which in rare instances have been found on the exterior of the skulls of females who died when pregnant, or during the puerperal state, are but an apparent exception to this statement; for here the exudation is from the skull, not from the pericranium.

Scrofulous Affections of Bone.

1. Very frequent in youth.
2. Scrofulous history.
3. Spongy or cancelled texture of bones attacked.
4. Deep parts of the bone.
5. Much tendency to enlargement of the bone.
6. The tumefaction precedes the pain, but the latter soon increases and becomes more and more intense as the disease advances.
7. A tendency to diffusion.
8. Enlargement of bone.
9. Tendency to sootering, to suppuration, caries, and necrosis, but not to ossification.
10. A chain of scrofulous symptoms widely differing from those of syphilis, either concomitant or antecedent.
11. Very difficult to treat, cure often incomplete, and sometimes impossible.

also experience compression; and when this happens, all the recti muscles, except the external, are paralyzed. The patients see very well when their eyes are directed straightforward; but when they attempt to give a lateral glance, one of the eyes remains unmoved, while the other obeys the will; the parallelism of the eyeballs is lost, and diplopia is the result. If the patients attempt to look upward, the inferior oblique muscle on each side fails to act, and there is again a want of parallelism, and consequent diplopia; but the latter is then of a superposed nature. I even recollect having seen cases of polyopia resulting from tertiary lesions. The facial nerve is sometimes paralyzed in a similar manner under the influence of tertiary symptoms; but this paralysis is always accompanied by deafness, while the affection of the same nerve, resulting from secondary symptoms, has (as you probably recollect) no such complication. With secondary symptoms, the lesion of the facial nerve produces only a singing in the ears, which depends either on inflammation of the mucous membrane lining the Eustachian tube, or on slight congestion, or on extensive irritation in the throat. The eighth pair may likewise suffer compression from the same causes; obstinate vomiting then sets in, and is controlled with much difficulty. Another consequence of this species of compression is epilepsy: but this otherwise formidable disease is, in such cases, easily got rid of. The fits commonly seize the patient when the osseous growth producing the compression gets more considerable and irritating. I must not omit to mention paraplegia as a casual effect of tertiary syphilis in the bones; the nervous disturbance is then the result of an osseous lesion, which latter begins by circumscribed nocturnal pains, and develops itself very slowly. Paraplegia may also be produced by a cutaneous elastic tumor; but I need hardly say the latter is never preceded by the gnawing pains which generally usher in ostitis. It is very important to establish a correct differential diagnosis between these osseous lesions and the results of an elastic tumor of the skin, for suppuration and the train of symptoms following compression are almost inevitable in the latter case, while in ostitis these results may be avoided."—*Lancet*, vol. i., 1848.

TREATMENT.—*Local Treatment of Affections of the Osseous System.*—*Pains in the Bones* should be treated, at first, by repeated applications of a few leeches, followed by poultices; or the parts may be covered with lint dipped in a warm decoction of poppies, or water and laudanum; this treatment, together with a general one compatible with the state of the patient's constitution, will usually suffice, when the pain does not depend upon inflammation of the cancellous structure. However, there are forms of this affection which resist, and, although we are unable to detect either periostitis or ostitis, yet only cease on employing the treatment hereafter to be mentioned.

The Treatment of *Periostitis* should consist, at first, in attempting to allay all irritation by leeches and poultices; when the first and third varieties exist, such a practice will often suffice; in other cases we must have recourse to a treatment which acts like a charm on the disease. Let a blister be applied on the painful portion of the bone; when it has risen, the serum may be allowed to escape, but the epidermis need not be removed, as the pain will be less; lint spread with the ceratum opii ($\frac{3}{j}$ to $\frac{3}{iv}$) may be laid over it, and the whole covered with warm poultices, which should be constantly renewed. The severity of the disease, or its return, may require a repetition of the blisters, which should be treated on the same plan. When the tissues have not undergone much organic change, the relief felt is immediate and lasting; we have frequently seen patients fall into a calm sleep even during the drawing of the blister, and this in the case of persons who have been kept awake by violent pain for weeks; if swelling be present, it may be often removed by the employment of blue ointment, applications of tincture of iodine and water, as by the formula given above, or the suppuration may be kept up by means of the solu-

tion of corrosive sublimate. The pain attending this last substance will, however, generally preclude its employment. In the second variety of periostitis, this treatment is less efficacious; it may be necessary in such cases to make incisions and let out the pus, as by such means we may prevent a further separation of the periosteum from the bone, an object always to be desired.

Local Treatment of Ostitis.—The treatment recommended in the two former affections, viz., pain in the bones and periostitis, is equally applicable and judicious in the early stages of ostitis, accompanied with a deposition of callus forming the *epigenic exostosis*; but it may be necessary to employ the treatment more actively, and for a longer time, particularly in the *parenchymatous exostosis*. When called upon to treat a patient for diseased bone which has been converted into a species of ivory, all treatment will be unavailing, and it will become a question whether or no we might be justified in removing, by a surgical operation, this form of exostosis.

In cases of *caries* or *necrosis*, particularly of the bones of the face, no time should be lost; they must be removed as soon as that is possible. M. Ricord observes, that the surgeon should be fully aware that caries produce caries; that a bone, the organic matter of which has been destroyed by suppuration, or which is dead, can never be regenerated by any treatment, general or local; and that it should never be left to be eliminated by Nature's efforts, except in those cases where the surgeon is unable to reach it. Bone of this description is truly a foreign body, keeping up and maintaining the disease, which, by means of the suppuration it gives rise to, may gain still deeper parts, and thus occasion death.

For the removal of dead bone, or to ascertain if the exfoliated bones are still firmly fixed, Dupuytren's suggestion may be followed—that with the end of one probe resting against the dead bone, a second probe should be introduced into another of the fistulous passages, and its end pressed against the dead bone; if this be moveable, it will be made evident by the impressions communicated through the probe which was first introduced.

General Treatment.—Our sheet anchor in the treatment of these affections of the osseous system is the iodide of potassium. It will, however, be unnecessary here for me to describe the method of giving it, the inconveniences it gives rise to occasionally, &c., as these matters have been already so fully discussed at page 373. In tertiary symptoms patients bear it much better, and require larger doses. In my own practice I rarely employ more than from five to ten grains three times a day; but Ricord recommends a much larger dose, viz., fifteen grains the first day, forty-five a few days later, and if the therapeutic effect is not observed, the dose may be still further augmented. He says: "The influence produced on the osteoscopes may very well serve as a criterion of the action of the remedy, provided these osseous pains do not arise from suppuration, and they be strictly a result of the diathesis. I have had patients in whom the removal of these pains required as much as one dram and a half, two drams, and even three drams per diem. When a certain dose has once been fixed upon, it ought to be persevered in as long as the therapeutic effect is evident, and so long as the pathogenic action is not alarming. But the medical attendant must in this matter, as in many others, use his judgment, and regulate the modifications which the treatment is to undergo, according to the peculiar circumstances of the case."

"You see, therefore, that we know pretty well what ought to be the daily dose of the iodide, but we are not so well informed as regards the absolute quantity which can be given with safety; it is impossible to fix this beforehand. Neither do we know exactly how much time this medication may be continued in order to free patients from the possibility of a relapse. I will merely repeat here what I said about the mercurial treatment—namely, that

the iodide must be continued for as long a time as will fairly warrant us in supposing that it has done its duty ; but you must recollect that neither this salt nor mercury is a certain and unsailing protection against relapses. Yet I must say that patients who have persevered with the iodide for three or six months have remained a long time without fresh attacks, and they will perhaps never experience any."—*Lancet*, vol. i., 1848, p. 656.

CHAPTER V.

ON THE CAUSES OF DEATH FROM SYPHILIS.

SYPHILITIC CACHEXIA.

IT is a very prevalent idea that syphilis kills its thousands. Many medical men even believe that the affection acts as a sort of public scavenger, getting rid of the shoals of prostitutes that haunt our public thoroughfares. When I have asserted that, according to my observations, syphilis fulfilled no such mission, I have been met with the reply, "But, if prostitutes do not die from syphilis, what becomes of them?" Vain was it for me to tell these gentlemen that neither in Paris nor London did syphilis prove frequently fatal in hospitals. "Pooh, nonsense," was the answer I received ; "they die in workhouses, in the slums ; in fact, in the low lodging-houses. Formerly they may have been burked, but now they die of syphilis, drink, and misery."

To prove the correctness or errors of these assertions, I commenced a series of inquiries on the subject. The first question was to ascertain the average number of persons attacked with syphilis, as well as the probable number of prostitutes in the metropolis. The army and navy returns enabled me to show that syphilis was very common in the public services. Thus, in the army, as shown in the introduction, pages 9, 10, one man in every five is annually affected with venereal disease ; and in the navy, one in seven. In the merchant service, two out of every seven admitted into the Dreadnought are suffering under the complaint. In St. Bartholomew's hospital I found that nearly one out of every two surgical out-patients applied on account of venereal affections. Here, at least, there was something definite : syphilis was proved to be a very common disease, but was it a fatal one ? To solve this, it was necessary to refer to the registrar-general. Major Graham, with his accustomed kindness, lent himself at once to my views, when I expressed a wish to ascertain the causes of syphilis proving fatal (as had been shown for some years in the mortality tables), and he has, at considerable trouble, extracted the details of all the fatal cases which have occurred in the metropolis during the years 1846-'48, from which I have compiled the table on 396, for the purpose of easy reference.

On looking over this table, the first thing that strikes the surgeon is the paucity of fatal cases from syphilis in adults. Notwithstanding the frequency of the complaint in the metropolis, as shown from preceding pages, only 127 deaths are noted in adults, out of a population amounting to more than 2,000,000, during 156 weeks, the average is not one a week. This, and a succeeding table on the proportion of deaths from syphilis in infants, page 428, show that syphilis proves most frequently fatal to children under one year of age, a fact which, previous to the formation of these tables, was not known to the profession.

CAUSES OF DEATH FROM SYPHILIS.

TABLE showing the fatal cases of Syphilis in Adults, which have occurred in the Metropolis, during the years 1846, 47, and '48; distinguishing the males from the females, and the diseases of which they died at different periods of ten years.

	FEMALES.					MALES.					MALE AND FEMALE OF ALL AGES.	
	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	Of all ages.	
Syphilis	312	5	7	2	29	4	4	2	—	4	14	43
Phagedænic disease	23	—	—	—	5	—	—	—	—	—	2	7
Disease of bone	11	—	—	1	3	—	1	—	1	—	2	5
Ulceration of larynx	12	—	—	—	3	15	—	—	—	—	6	9
Venereal disease	—	31	—	—	4	12	—	—	—	3	7	—
Consumption	26	1	—	—	9	16	—	2	1	10	19	—
Chest affection	12	—	—	—	3	11	—	—	1	—	3	6
Paralysis	—	—	1	—	1	—	1	—	—	1	2	—
Cachexia and debility	22	31	—	—	8	—	—	13	3	—	4	12
Erysipelas	51	2	—	—	8	35	1	—	—	9	—	17
All diseases	1632	13	9	3	73	1325	4	6	6	54	—	127

This table, moreover, contradicts the very prevalent opinion, that a large number of women, particularly prostitutes, die annually of syphilis. In the above table we find 73 women only to 54 men; and this proportion is the more striking, if we recollect that the female population of London is much more numerous than the male, in the proportion of 120 females to 100 males, or about five males to six females. Let the philanthropist well weigh this fact; whatever becomes of the prostitute, she does not die of syphilis. Novelist, pause again before you depict her perishing, covered with sores, in a back-attic, in a filthy lane or alley in London. Such descriptions may do well to point a paragraph or paint a moral, but it is no less untrue. The registrar-general tells you so, in statistics that no one can gainsay. How syphilis terminated formerly we are left in entire ignorance; but in this the nineteenth century prostitutes do not thus perish. It is not upon this unfortunate class of women that syphilis commits the greatest ravages, and my experience on this point may not, perhaps, be uninteresting.

Let those who have attended the syphilitic wards of hospitals recall to their recollection the class of women found there. The fact of a girl becoming seduced generally guarantees that she possesses good looks, health, and youth, and a well-proportioned frame. Such qualifications are generally incompatible with a feeble constitution; she at least enters on her career with advantages which the poor married woman never perhaps knew. Has not the tenor of this whole treatise, I would ask, been to show, that syphilis in healthy persons is trifling in its effects? and so, in fact, you find it in the female. Notwithstanding all her excesses (and legion is their name), she passes through the streets, less the worse from wear than her paramour; and when she retires from the scenes of vice, as retire she will in a few years (for old prostitutes are very rarely met with), you do not find her with her nose sunk in, the palate gone, or nodes on her shins.

Compare the prostitute at thirty-five with her sister, who perhaps is married, the mother of five children—compare her with the dress-maker, who has been toiling in over-heated rooms for the space of ten or fifteen years, and then say if syphilis and dissipation have produced the ravages you imagine. Let it not for an instant be supposed that I would commend the prostitute's life as an example or model: if any one should think this my intention, let him ask the first one he finds in an hospital what she herself thinks of her vocation, and she will tell you that no slave has suffered so much as she has done, both physically

and morally. The pampered of to-day, the neglected of to-morrow, left alone to all her own bitter reflections for the greater part of the twenty-four hours, to associate (if kept) with one she cares not for, and yet her bread depends upon pretended affection; turned on the streets at a moment's notice, there to become the paramour of the first drunkard or swindler; frequently infected, yet obliged to ply on her station for a living, she shrinks into obscurity, and hides her head in the first home offered, not from fear of syphilis, but disgusted with her mode of life. This is the true picture of the harlot's progress.

Death from syphilis is then a very rare occurrence in the present day; so rare is it, that many a surgeon has never perhaps witnessed one instance: and those attached to hospitals where venereal diseases are specially treated, have few opportunities of witnessing *post-mortems* of persons laboring under the disease, which is so rife in our army and navy. Is it not, then, interesting to inquire how the disease produces death? and this is clearly shown by the admirable arrangement of the registrar-general. In the first place, erysipelas may attack the sores of all patients entering an hospital, and a small proportion die from this cause in common with all other diseases; but here syphilis acts but a secondary part in producing death, although a fatal termination followed in seventeen cases in the above table. We occasionally, in the present day, meet with death from sloughing phagedæna. I lately saw an instance in a man who died, not in consequence of the severity of the local disorder, but from debility and loss of blood by stool, which nothing could check, and which was found to depend upon ulceration in the intestines. Sir A. Cooper mentions in his lectures, (see page 276 of this volume), that he witnessed seven cases of phagedæna in one ward on the same day at St. Giles's work-house, and that five of them proved fatal. I made inquiry lately at the work-house, and the disease is unknown there at the present day. In the preceding table death from phagedæna only took place in seven instances.

Dr. M'Carthy tells us, in Paris: "Out of nine patients affected with phagedænic serpiginous chancre four died from the progress of the disease and colliquative diarrhoea, and on opening these four I found violent inflammation of the entire colon and rectum, and I observed the mucous membrane sprinkled over with ulcerations. It is not uninteresting to compare this fact with the frequency noted by Dupuytren of the occurrence of ulcerations in persons who have died from the effects of severe burns."—*Thesis*, 1844, page 17.

Omerod mentions, "Clinical Observations," that a patient died at St. Bartholomew's from giving way of a vessel in the upper part of the vagina.

In the army returns above quoted only two deaths took place in the seven years and a quarter; one of them followed from phagedæna, and the other from cachexia syphilitica, which we shall presently speak of.

In Wild's excellent work "On the Medical Institutions of Austria," we find seven deaths reported as having taken place in Vienna; five the result of bubo, probably sloughing; one from sore-throat; and one from general secondary symptoms. Of these, three were males, and four females.

Deaths from primary or secondary symptoms is of very rare occurrence; in fact, I do not very well see how death could be produced, unless erysipelas, fever, or acute inflammatory disease, sets in, and destroys the patient.

Syphilis is most frequently fatal when it has reached the tertiary form: here it is (particularly in neglected cases) that we observe the ravages of the complaint, destroying the patient by depositing bone, which presses on the brain, inducing paralysis, convulsions, and other nervous phenomena; in other cases caries of bone take place, and the patient dies from exhaustion; sometimes, as in the throat, the cartilages of the larynx are destroyed, and the patient dies asphyxiated; lastly, a state known as syphilitic cachexia comes on. M. Ricord, in a

late lecture in the *Lancet*, makes the following judicious observations on the affection :—

" Now, it may fairly be asked, as we have pretty well exhausted the list of tertiary affections, whether there is such a thing as a fourth degree in the succession of syphilitic sequelæ. To this I am bound to answer in the affirmative. That quaternary state may be called

" **SYPHILITIC CACHEXIA**; but this state does not present very distinct characters; it is, in fact, tertiary syphilis having reached a very high degree of intensity. It is, however, a very mistaken notion to imagine that this state is the result of several syphilitic infections; one is quite sufficient; and, as I have often before stated, the real infection of the system *does not happen twice*. But I am glad to say that in our times this melancholy syphilitic cachexia is very rare. This wretched state may result—

- " 1st. From an originally bad or weak constitution.
- " 2d. From complications and morbid tendencies independent of syphilis, as scrofula, scurvy, the herpetic diathesis.
- " 3d. From an ill-timed and badly-managed treatment.
- " 4th. From the persistence of certain syphilitic accidents.
- " 5th. From any cause which tends to weaken the constitution.
- " 6th, and lastly. From a peculiar temperament, which renders the patient quite refractory to treatment.

" If I were to attempt a description of syphilitic cachexia, I should fail to convey to you a clear notion of it, because its characters are not sufficiently well defined; it might indeed be called an exaggeration and an accumulation of all the forms which we have hitherto studied, combined with loss of flesh, paleness, flabbiness of all textures, sallow hue of the skin, weakness of the intellectual faculties, scorbutic manifestations, and, finally, hectic or continued fever, with exacerbations toward the evening. This fever very often persists when the external cachectic symptoms have entirely disappeared; and it is useful to know that it is sometimes symptomatic of an internal suppuration which escapes our notice. To all these symptoms aphonia is soon added; diarrhoea, profuse sweats, and defective nutrition, come on, and death at last releases the wretched being from his sufferings. But, I repeat it, this species of cachexia is now very rare, and, I may add, that it will become still more so, thanks to the progress made in the therapeutics of venereal diseases."

I had an opportunity, about five years since, of being present at the *post-mortem* examination of a girl, aged seventeen, who died of syphilitic cachexia, and, as I am not acquainted with any authentic particulars of similar cases, I shall give the results in full.

Post-mortem examination of a Girl, aged seventeen, who died of Syphilis in the Middlesex hospital, Dec. 4, 1845.—Mr. Hetley was kind enough to invite me to attend the *post-mortem* examination. I collected the following history: This girl was treated in January last for chancres at the hospital; it was stated that she had been seduced, deserted, and infected, on the same day. Rupia broke out over the body, particularly on the head, face, and right leg; the eruption was described as being the most prominent ever seen. Everything had been tried to cure her but she sunk as supposed from a cavity in the lung.

Appearance.—Thin to an extent rarely seen. The hair had been cut close, and scars, said to have followed rupia, were evident on the face and head, and on the right leg; but the rupial crusts had fallen off. A considerable quantity of fluid was found in the abdomen and chest, with some old adhesions; the lungs generally healthy, emphysematous in some parts on the surface, in others there was some consolidation, and a few points, like tubercles, slightly softened; the liver large, firm, and of a nutmeg character; heart small, cavities very

small, parietes very thick ; uterus that of a virgin, healthy in structure. The intestines were not examined.

My principal object in viewing this case was to consider how a patient dies from syphilis. We are told consumption kills them. Surely this was not the case here, for there was no disease of the mesenteric glands or lungs sufficient to account for death. The syphilitic tubercles, spoken of by Ricord, were not evident, although I particularly looked for them.

An instance in many respects similar to the above occurred to me about the same time ; it presented circumstances which prove how little is known about that unfortunate class of women that come under the general category of prostitutes. The case deserves attention for many reasons. I was called to see a young girl who was stated to be very ill, at King street, Islington. I found my poor dispensary patient living in an attic, in one of those small streets off the Lower Road, attended by her mother, and without fire, furniture, or almost any clothing. There she lay, doubled up in a corner of this bare room, on an old mattress stuffed with shavings, with only a thin patched quilt and a few rags, covered with rupia and attenuated to the last degree, though bearing marks of having been a very pretty girl.

She had never left her parents' roof for twenty-four hours, but the mother, poor creature, had been obliged to quit one lodging for another, until at last she was reduced to occupy this one. Seduced, diseased, and deserted (the too frequent, sad history which a medical man listens to), her mother had never quitted her, and, apparently, was unaware of the nature of the complaint her daughter labored under, so naive did this poor mother remain in this city of licentiousness. Notwithstanding all her misfortunes, she had never applied to the parish, although she obtained the most scanty support by her needle ; latterly, however, her attendance on her daughter had precluded even this means of support, and she had parted with everything. Warmth was only obtained by creeping close together under this miserable counterpane. The daughter, unknown to her mother, had applied as long as she was able to the hospital.

At once, seeing the nature of the case, and the impossibility of being of any service to this poor creature, I spoke of the hospital, but neither mother nor daughter would hear of it ; they had never been separated and never would be ; persuasion was in vain ; assistance was procured ; still the debility increased, and I was absolutely obliged to threaten that I would take steps to get the parish officers to interfere. At last this poor creature consented to be carried to the hospital, but at such a stage of the complaint it was with the greatest difficulty this could be effected. She was admitted into St. Bartholomew's hospital, supplied with all that that noble institution so liberally furnishes to its sick. At first the comforts caused her to rally, but an immense abscess formed in her thigh, and she sank under the complaint we have here attempted to depict—syphilitic cachexia.

Reader, could you stand by and see a human creature brought to an untimely grave by syphilis and not feel a pang at being unable to stay this plague which spares the life of the common harlot, and hurries into eternity such frail vessels as these. If these be thy victims, syphilis, art thou a punishment sent by the Almighty as some have supposed !

Cachexia syphilitica is a very rare complaint ; it proved fatal in London only twelve times in three years ; when it does occur, however, the prognosis is very serious, still the surgeon should never despair. I lately attended a gentleman suffering from the most unpromising symptoms I ever witnessed. My patient contracted chancres, which he neglected and concealed from his brother, a physician, and took blue-pill by the advice of a druggist ; in a very short time rupia appeared, and he was confined to his bed with ulcerations (as large as the palm of the hand) on several parts of his body. When I saw this

patient he was reduced to the last stage of weakness ; everything had been tried that his brother could suggest, but the sores progressed in spite of treatment. He was placed on a water bed, the strongest possible nourishment given, tonics seemed to be of little avail, and he only recovered slowly by minute doses of corrosive sublimate taken during a long period. He now walks about a consumptive-looking individual, it is true, but an undoubted evidence of the power of corrosive sublimate in rescuing from the grave one of the most unpromising subjects I ever met with. I can not recommend, however, this remedy as being of general application, for I have since seen another gentleman in whom it did not appear to exert the same beneficial influence ; but in this last instance my patient had a very severe emphysema, and appeared principally relieved by time and travelling.

C H A P T E R V I.

MONOMANIA SYPHILITICA.—SYPHILIPHOBIA.

SYPHILIPHOBIA ! Critics smile at this newly-coined word, as I myself did some years ago on hearing my late master, M. Ricord, propose to write an article on this subject. As he has not yet published his opinions on this form of monomania I shall in the following pages describe a class of cases private practitioners must often meet with, although they will in vain turn to the pages of those who have described syphilis, or the protæan forms of insanity, for its description.

This class of complaints stands in direct opposition to feigned diseases ; instead of our patients simulating certain affections or complaining of sensations, which they themselves well know are for the mere purpose of misleading the medical man, the syphiliphobist describes only what by an exaltation of nervous sensibility he fully believes he sees or feels.* Like hysteria, syphiliphobia will assume every form of venereal disease found or described in books, and in a ten-fold degree, or like hypochondriasis, every trifling ailment will be exaggerated till the medical man is unable to distinguish what his patient really feels and what he supposes he feels.

Did isolated cases only now and then occur, perhaps they might not deserve attention, but so numerous are they in a large capital like London, so anxious are the sufferers to obtain relief by consulting every man who can be supposed to offer them any means of relief, that they spend fortunes in travelling about and visiting every quack or novel quidnunc who gulls the public by assuming a knowledge which he does not possess.

I have been consulted by a great number of persons who are fearful they suffer from syphilis in one form or another ; and although many of these sufferers can be said to have syphilis only in their imagination, others have presented anomalous symptoms of disease which might lead the best-educated medical man to waver, or doubt if really it was syphilis he was called on to treat, and not the phantom above spoken of. The mistakes are most liable to occur from the surgeon depending upon the history given by the patient, rather than by the appearance which he meets with. The reader will perhaps, best study the

* Although there is an apparent explanation of some delusions of the kind now mentioned in the morbid condition of the nerves of sense, many delusions neither admit of this or of any other probable explanation. We may conjecture that they arise in the mind, and for a certain time, or permanently prevail in consequence of a defective innervation of some part of the brain analogous to what is observed in certain partial impairments of sensation.—*Dr. Conolly's Lectures, Lancet, May, 23, 1846.*

various forms of the affection by the perusal of the following cases which have occurred in private practice.

Syphiliphobia resembling Gonorrhœa Præputialis according to Patient.

May 12, 1844.—A gentleman called to-day to show me the slightest possible redness between the glans and prepuce, about which he seemed very anxious. To judge from his questions, I presumed he had toyed with women and had become conscience-stricken, anxious to know if the trifling symptoms could be venereal; he viewed the natural appearances of the part as abnormal; the ring of little glands around the corona glandis appeared to him to betoken disease; he was particularly anxious to ascertain if he could have possibly contracted venereal through the trowsers? were the few spots of acne, and a patch of eczema on his chest, venereal? Such were some of the questions he had taken down in his pocket-book, and now came anxious to ask my opinion on. I told him the symptoms were not venereal; this hardly satisfied him, and he again repeated, had I not seen slight venereal symptoms occasionally like these? Could indigestion or non-erection, or rather non-emission, and excited feelings, produce these consequences? Such was the drift of his questions, and in appearance, conversation, and manner, he was a good specimen of the syphiliphobist. I prescribed for him dry lint between the glans and prepuce, recommending the use of tannic acid and water, one scruple to three ounces, and he promised to let me know the result.

The forms that syphiliphobia may assume, are as diversified as is hysteria, and their treatment may puzzle a medical man as much. No sooner does an advertisement of my book appear in the public journals, than I am sure to be consulted by some of this class of patients; and they follow the advice of the advertising quacks, in "being very particular in the description of their symptoms." The above case may give some idea of the questions and of one form of the complaint. Persons when laboring under this malady, are not only very particular about their own symptoms, and minutely observant of their feelings, but exceedingly curious in matters relative to the healthy functions or supposed actions of the organs of generation; they are equally touchy and choleric on any question which induces them to think that we treat lightly of their complaints; if any attempts are made to frighten them, or exaggerate their sufferings, they have sufficient tact to see that a deception of an opposite nature is being practised, and they resent the schemes of the man who may wish to rob them by acting on their fears. Thus they despise, at the same time they go to the advertising firms, and sift their abilities by a thread of questions which they have crammed from books, and wish to learn how to learn to apply to their own cases.

I have had patients under my care who have made the round of the profession, legitimate and illegitimate; there are a few that will tell you what John Pearson did in their case, as well as relate anecdotes of Dr. Eady; they have even been into the provinces to consult the advertising firms there. And having personally consulted you (if they live in the country), they will attempt to keep up a correspondence, and one of their greatest pleasures appears to consist in convicting you of having misunderstood or misstated their symptoms; but the usual tenor of their letters is, that they have discovered a new symptom, which they give in full, or describe verbatim from some standard work, or some of those trashy publications daily advertised.

The medical profession themselves seem particularly liable to this form of monomania syphilitica; the disease in them generally assumes the form of the sequelæ of syphilis. So long ago as 1720, Turner, a celebrated writer on syphilis, related four cases; two of these occurred to professional brethren;

showing that in his day an author on syphilis had the same embarrassments as a surgeon of the present age. I will relate one case as a good specimen; it was taken down in 1846, since then I have ceased to record instances, as they no longer present features of novelty.

Monomania Syphilitica assuming the Characters of Sæquelæ of Syphilis.

April 28, 1846.—A gentleman, well known to the profession, called on me to-day complaining of the remains of a syphilitic complaint; he pointed to a few reddish spots on his forehead, a pimple inside his nose, which arose from an inflamed hair follicle, pains in the palate, blood coming from the nostril as shown on his handkerchief when he blew his nose, and discharge; none of these, however, I could verify. His history was as follows: About two years ago he became subject to excoriation, but never had induration of any kind; about eighteen months since boils broke out, which he believed and treated as syphilitic, and took blue-pill till it affected his mouth with difficulty; the symptoms disappeared, but returned again in some form or other, for which he took mercury and iodide of potassium; but I could not ascertain that the eruption was in any way characteristic; in fact, I believe this gentleman never had syphilis; during the last six weeks he has been taking corrosive sublimate, increasing the dose to one fourth of a grain three times a day, no tenderness of gums or symptoms at present of salivation. I recommended him to leave off mercury and take iron, and on the recurrence of any characteristic symptoms apply to me at once, when I could satisfy myself of their nature; he promised to return.

June 28.—This gentleman came back to-day, showing me the septum nasi, which was red, and the back of the throat covered with a green dry secretion; had taken iron for some time with benefit. I told him I could see nothing syphilitic, although the membrane was slightly red; pains, he asserts, are violent in the nose. To return if ulceration occurs.

July, 1849.—I have seen this gentleman several times since; he is now himself convinced that his complaint was not syphilitic, and that he took mercury unnecessarily.

Monomania Syphilitica assuming the Characters of Disease in the Patient's own Nostril, as well as on the Body of the Offspring.

A well-known London physician came to me with a history similar to the former, but no persuasion on my part could shake his opinion that he had not disease of the septum, which, according to his account, was *about* to fall in. There was considerable redness of the mucous membrane, as well as acne on the body. These appearances, coupled with pains in his shin-bones, convinced my patient that he was suffering under the most violent form of syphilis. Nothing I could say appeared to have any influence on him, and he had been taking mercury to some extent, which he told me was the only thing that had saved him, or would protect him; his only object in coming to me was to obtain my sanction for continuing on the mineral to the fullest effects of salivation. I need not say that I recommended all mercury to be left off, and iron and tonics to be given.

After many visits, finding that he was unable to alter my opinion, and probably shaken in his own belief, he brought me one day, carefully wrapped up in paper, what he stated was a convincing proof that I had been wrong all along, and what fully corroborated his own suspicions. This was no less (patient liquor) than a large portion of bone which had come away from his nostril. I looked at the substance, which at first sight presented something of the appearance of a portion of dead bone, and might have been mistaken for it, but on

close examination it turned out to be nothing more than a portion of the core of an apple, and the occurrence is the more interesting inasmuch as I do not believe the patient was desirous of deceiving me. The defeat of his pet opinion, however, in no way discouraged him; during the next few months, his fears turned on the probability of his child becoming affected with syphilis (he had lately married, and his wife was pregnant), and he returned several times subsequently, complaining that the child had the snuffles, and was infected; ultimately, however, as the infant grew, he lost this impression, but is still firmly convinced that he is laboring under latent syphilis, which will one day break out, and awaits with anxiety the publication of this chapter. Now, with the exception of this deeply-rooted opinion, there are few men in the profession who have correcter notions on medical subjects; but I am obliged to class him among my monomaniacs, and regret the existence of a deep-rooted idea which embitters his existence. Before quitting the subject, I may mention that medical men appear to form very erroneous notions on what they call an unhealthy state of the throat and nostril. There may be redness of both one and the other without disease; why should not redness of these parts exist as well as that of the face generally or of the nose? and when it co-exists without any symptoms or suspicions of syphilis, mercury is too often given. The same may be said of increased secretion of these parts; some persons' mucous membranes secrete habitually either a thick tenacious, or a serous-looking discharge. I lately had under my care one of the officials of a railway, whose nostrils were red, secreting a most profuse discharge, which several surgeons had seen and called syphilitic, but which had no relation to that complaint, although it presented the most obstinate resistance to the usual remedies I ever knew. Such cases, however, show that medical men should be very guarded in their opinions.

Another form that *syphiliphobia* may assume is, when patients refer the complaint to the *testes*. I have been consulted several times by patients who lodge complaints against the testes. Thus: "Doctor, are my testicles of a proper size? are they not too large?"—"Are they not too small? is not the epididymis the seat of disease?" You make an examination to satisfy them, and varieties in these organs are very common. But what has astonished me not a little is the manner in which patients themselves handle these organs: one will squeeze them, and say that pressure gives no suffering, although at times they experience shooting pains in the organ; another can hardly bear the exposure to the air; and, when the surgeon attempts to examine the testes, the one party will tell you if you squeeze harder they feel, others will not allow you to make the most gentle examination. These are among the earlier symptoms probably of that anomalous disease called irritable testis, which we class under the generic head of *syphiliphobia*.

Sometimes the patient accuses the bladder, at other times the prostate, as being the seat of very peculiar symptoms, which have only this in common—that without any apparent cause or symptom, his sufferings are exaggerated to a degree that we do not really meet with in the disease the patient supposes himself affected with. A most lamentable case of this nature came before the public lately, in consequence of the sufferer having committed suicide.

There is something very peculiar in the aspect of this class of patients, which, coupled with the exaggerations of symptoms, leaves the surgeon in little doubt on the nature of the complaint; but although the diagnosis may be easy, the treatment is by no means successful. Abernethy's prescription for the idle man, that he should live on sixpence a day and earn it, avails nothing; for we meet with these complaints among the working classes, not only in London, but in the country.

It is among country patients particularly, that all the supposed symptoms of im-

potence, spermatorrhœa, or seminal weakness, occur; and it is almost impossible to say how far the disease may be simulated or not. I have dwelt at such great length on this subject in the chapter on those diseases, that I must refer my readers to it; but a pretty considerable observation of these cases convinces me that the hypochondriac and syphiliphobist takes delight in calling his complaint spermatorrhœa. There has been a fashion of late years to treat these complaints, which patients know are obscure, and, as they discover that the quacks, professional and not professional, will believe in any story referable to spermatorrhœa, and that their symptoms will meet with sympathy, and their complaints be treated with the heroic remedy—caustic; the major part of these syphilitic monomania come to you complaining of these anomalous symptoms, which it is impossible to verify, but which pass very well for the disease, particularly when a patient has read a quack book or two. It is, however, to be regretted, that those who have written on spermatorrhœa, have not discovered how often they have been imposed on by these patients, whose urethras have too often paid the penalties for the experiments which have been made by surgeons treating these complaints as true cases of spermatorrhœa.

The inmate of many a lunatic asylum could give us a sad catalogue of errors of diagnosis; did he possess all his reasoning faculties, he could tell us that the monomania syphilitica was countenanced early in life by many a designing knave who robbed him of his money, while encouraging his fancies; that this same charlatan, professional, or extra limites, thought it necessary, to carry out his views by frequent cauterization, which had terminated in the present affections of the genital organs, that virtually produced the disease he once so much dreaded. But, poor fellow! this view of the case is happily not present to his mind, and he goes to the grave the victim of his own imagination, and a martyr to the injudicious treatment which has been pursued.

THE TREATMENT of patients laboring under monomania syphilitica requires but few observations. When they consult me, I listen with attention to their complaints; for among the number there are many who present complications or features which require attention. I attempt to sift the symptoms, remarking those that can be attributed to syphilis, and exclude such as can have no reference to the complaint. If any reasonable suspicion of the latent disease can be entertained, I watch it; and at the same improve the patient's general health. I take advantage of any confidence I may have gained, to remove the puerile alarm, by directing their medical inquiries (for these patients are great readers of books) to such portions of authors as are likely to set them right in their preconceived notions. Assertion is of no use; the surgeon must try to convince his patient; some will yield their opinions, others become more stubborn in their error; the latter class I refuse to prescribe for. In leaving me, I am well aware they find others that will "minister to a mind diseased," but I fear ultimately it will be in some asylum. The former class, by judicious moral treatment, with a very little physic, and very much exercise, particularly gymnastics, recover entirely. I hope I have been the instrument of restoring happiness to many a poor creature, whose sufferings have been phoo-phooed by the heads of the profession, and made the fool of by quacks. Further directions about treatment it is impossible to give, for the affection assumes all the protæan forms of monomania, the syphilitic form of which is scarcely hinted at by English authors.

CHAPTER VII.

INFANTILE SYPHILIS.

SYNONYMOUS TERMS.—In the various works on diseases of children, the complaint I am about to describe has been treated of under the terms *Infantile—Congenital—Hereditary Syphilis*, or *Syphilis in Children*. We shall prefer the term Infantile Syphilis, inasmuch as it is the most comprehensive, and includes all the cases, without prejudging the manner in which the disease may occur; but let the reader recollect that the descriptions are confined to the affections in infants under one year of age, and therefore we use the term syphilis in infants rather than syphilis in children.

In the following pages I shall describe what I have observed, rather than what I have read or what others have remarked; for it will be noticed, by those who may take the trouble to investigate the subject, that authors have generally copied one another, and taken for granted much that admits of great doubt, and viewed facts in a manner permitting of quite a different interpretation. If I do not cite many authorities, let it not be supposed that I am ignorant of their opinions, let it rather be inferred that I am unwilling to distract the reader's attention by numerous references, and desire to present him with a clear, concise account of the disease as we may observe it at the present day, bereft of all theories, which often tend to encumber a very simple subject; I shall, nevertheless, subjoin in foot-notes all important corroborative evidence, or statements which are opposed to the opinions I myself entertain, leaving the reader to carry the investigation further if he chooses.

DEFINITION.—The terms congenital—hereditary—or infantile syphilis, have been usually employed to describe certain specific affections (to be hereafter described) of the fetus or infant, which it is said may affect it during its intra-uterine life, or which more frequently show themselves in the infant a few weeks after birth, and depend upon an hereditary taint communicated by the parents or wet-nurses; but in the course of this chapter I shall not only describe these affections, but add some further particulars of infantile syphilis contracted without the parents being affected, and discuss how far nurses may or may not be able to contaminate their foster-children, and how far dry-nurses may act in the same way.

SYMPTOMS.—The offspring of parents laboring under syphilis may be born at the full period, in apparent perfect health;* in other instances the children are puny, small, and very delicate. This striking difference seems to depend upon whether one or both parents are affected, and whether the disease has recently obtained a footing in the system, or whether it has nearly worn itself out, a tendency to which we have elsewhere noticed in good constitutions, and which occurred in the case of Y. Z., page 413. Can the disease appear at birth? This is a question very difficult to answer. If the surgeon depends upon the statements of patients, he may believe at first in the fact that a child was free from the complaint, which, however, may have occurred so soon after, that the infant must have been infected, and they therefore date the commencement of the complaint from that time.† As far as my own observation goes,

* "We meet with a large number who come into the world with every appearance of the finest health; congenital debility appears by no means allied to the ulterior development of venereal symptoms."—Dr. Troussseau, *Archives Generales*, tom. xv., p. 151.

† Pearson says: "We have not seen one instance of a child born with lues; it generally does not appear till about the fourteenth day after birth, or from fourteen days to a month."—*Manuscript Lectures*, page 95.

and I have desired a great number of patients to let me see children after the accouchement, the disease was not noticeable for the first few days of extra-uterine life, although it occurred from ten days to two months. The mother observes at first the child's breathing to be peculiar, it has the *snuffles* as nurses call it; that is, the little patient's breathing is thick, particularly while the child is sucking, and the air, in passing through the nose gives you the idea the child has a cold, doubtless depending upon slight swelling of the mucous membrane. In a short time a muco-purulent discharge flows from the nostrils, which soon become plugged up. In some cases this symptom is the only one observed, in others the nostrils remain unaffected, and the first traces of disease are observed by the occurrence of simple erythema; the nates soon become spredated, and the nurse's attention is called to redness and soreness of the anus, thighs, and genital organs, a symptom often attributed to teething, but does not yield to that usual nursery panacea, violet powder. In most cases the affection is not confined to a mere redness, excoriation follows, and is succeeded by a more or less distinct eruption, assuming the form of large, flat, moist papules, which we call condylomata, and which will be found described at page 342. These mucous tubercles are very characteristic, in size equal to a split pea, sometimes distinct, in other instances confluent, elevated above the surrounding skin, which is of the color of boiled ham, in parts dry on their surface, and becoming scaly, in other places moist, and secreting a fetid discharge, which excoriates the surrounding surface, producing erythema, eczema, and psoriasis of the hands and feet, which presently crack, and cause great pain to the child, who loses flesh; and if the complaint is not treated the infant gradually sinks.

This forms the picture of an aggravated case; but in some instances the child does not lose its healthy appearance, on the contrary, it is a picture of health, and is brought to you because it has the piles (as the nurse called a ring of condylomata all round the margin of the anus), which is the only symptom; but this usually occurs in children that are a little older; still I meet with isolated symptoms, and which seem to result from the hereditary disease having nearly worn itself out, or from having to contend with a strong constitution in the infant, and occurs when every care is taken of the child, or may return as a relapse after treatment.

The corner of the child's lips may become covered with condylomata, and have a great tendency to crack, forming syphilitic psoriasis labialis, or the papules are noticed covered with successive scales, which, falling off, present a raw excoriated surface, and are very difficult of cure, as the cicatrices tear whenever the child sucks. The tongue is sprinkled over with white spots as large as split peas, and has the appearance as if its surface had been touched and whitened with caustic; this appearance extends to the throat and probably to the intestines, producing diarrhoea, or mucous and sanguinolent discharges. The German writers have examined these secretions from the lips and mouth, and state that they contain cryptogamic plants, hence their belief in the contagiousness of these complaints.

Disease of the bone is a very rare affection in children, but it may occasionally be witnessed in the ossa nasi, which I have seen fall in. However, the disease generally proves fatal before it has attacked the osseous system.

CAUSES.—In the definition of infantile syphilis, I have stated above that the

Tronseau says: "It is excessively rare to witness constitutional syphilis appear in new-born infants at the time of birth; it is still less frequently produced during pregnancy. We have never met with any manifestation of it thus early. M. Huguer, whose authority no one can question, tells us that he never saw a single instance of an infant born with well-characterized symptoms of infection at the Oursine hospital, which is specially devoted to syphilitic women."—*Loc. cit.*, p. 149.

"The opposite limit, viz., how late the disease may appear, and after which we find no risk of the disease appearing, we find very difficult to determine. We have never seen it appear later than the seventh month."—*Loc. cit.*, pp. 153, 154.

disease depends upon an hereditary taint communicated by the parents, or, some say, by the wet-nurses. If, in the following pages, I dilate at considerable length on the probable means by which the infant can be hereditarily affected, I must beg the indulgence of my readers, as the subject is a novel one, and has never been as yet fully treated of by authors. I, however, enter upon the question with more confidence, as I hope physiologists will be interested in the important facts I shall bring forward, inasmuch as they throw considerable light on the subject of impregnation. Syphilis, I think, is the only specific disease which can be satisfactorily investigated in reference to its morbid products; all other complaints with which I am acquainted present difficulties which are insurmountable; and if, in the following pages, I shall be able to throw any light on the many important questions of contagion, and on that obscure subject of impregnation, the labor that I have spent in their investigation will be amply repaid. I hope, however, in addition, to furnish such evidence as may be considered of importance in deciding many questions in medical jurisprudence which hitherto have not attracted that attention which, I think, they deserve.

The *modus operandi* of hereditary infections will, I think, be best understood by considering successively how far the mother, the father, or the nurse, may be able to infect the child; and in pursuance of this plan, I shall first treat of the

INFLUENCE OF THE MOTHER IN PRODUCING INFANTILE SYPHILIS.

It might naturally be expected that any specific disease in the mother would exercise a very great influence on the fetus with which she is pregnant; the free interchange of the elements of the blood between the foetal and maternal placenta would lead us to expect that a child could scarcely escape any general contamination of the blood of the mother; and we usually find in practice, that a female suffering under the secondary symptoms of syphilis will produce an infant that, soon after birth, will show unequivocal marks of the disease thus hereditarily attained. This, then, is an instance of the mother directly contaminating her offspring independently of the father, who may be perfectly healthy.

To make my meaning more clearly understood, I cite a case. A healthy woman, A., marries B., a healthy man, who has never had syphilis; B., soon after marriage, is obliged to quit his wife, who is a few months gone in the family way; she has intercourse with another man, who communicates to her an indurated chancre, followed by secondary symptoms: the child will probably be diseased solely through the vital fluid of the mother.

If all cases were as simple as the one above cited, the medical man would arrive pretty easily at his conclusions; but we are ignorant what is the latest period of pregnancy at which a woman thus becoming infected can transmit the disease to her infant. This most important point, however, deserves the particular attention of the profession: neither M. Ricord nor myself have enough facts to enable us to answer such a question; but in the interesting case of Mrs. M. M.—(page 417), her statement goes to prove that she was infected as late as the seventh month, and yet gave birth to a child that became diseased.

To arrive at this information, I would suggest that a table be kept as follows (see p. 408). Some fifty cases thus tabulated would settle the question, and might, in subsequent cases, assist the surgeon in sifting evidence where deception is intended; but, as in the majority of such cases the mother may attempt to deceive the medical man, great attention must be paid to the dates, and it must be ascertained if the husband is healthy, otherwise the conclusions will be very erroneous.

Impregnation; say January.	Indurated Chancre; say January or June.	Secondary Symptoms made their appearance.	Child born, September, healthy or infected.

In cases, however, where the husband infects the wife, the dates could be ascertained without any great fear of error, and would form valuable statistical evidence should it be published. I shall at all times feel much obliged by my professional brethren forwarding to me such accounts, as they will fill up the only lacuna now wanting to complete the subject.

Many accoucheurs believe that syphilis in the mother is a common cause of abortion, and that premature confinement at the seventh month, as well as the expulsion of a foetus whose skin peals off, are so many symptoms of syphilis. I subjoin a letter, published in the "Northern Journal" for 1844, in which the reasons against such opinions are given:—

"In the first edition of my work on venereal diseases, I ventured to call in question the truth of several ancient dogmas held in great veneration by accoucheurs of the last century, and which I was inclined to believe were admitted on too slight grounds by some even in the year 1840. In the last number of the 'Northern Journal' I find Dr. Campbell somewhat indignant at my questioning these opinions, which, he states, '*men of experience, who have been engaged in practice half a century or more, maintain to be true.*' On this occasion I purpose stating the points of difference between Dr. Campbell and myself. I believe that accoucheurs are in error in attributing solely to syphilis the occurrence of abortion about the seventh month, and my reasons are the following:—

"1. In the wards of hospitals devoted to venereal female patients, laboring under secondary symptoms, abortions are not more frequently observed at the seventh month than at any other period. 2. These females, in spite of all moral and physical impressions, frequently carry their children to the full period; and at the time of birth we meet with the infant quite healthy, or only sickening some weeks after. Such being the natural course of syphilis when observed on a large scale, I have hesitated in concluding that syphilis produces abortion at the seventh month, or that the circumstance of a child being born dead or putrid is of itself of any value in the diagnosis.

"Dr. Campbell, on the contrary, is an implicit believer in the opinion that when women miscarry about the seventh month, and the child is putrid, we must look to syphilis as the cause, and that a cure will be effected by giving mercury to both parents. The reason he assigns for this belief is, having witnessed the occurrence very frequently; and he gives the two following cases in support of his opinion:—

"*1st Case.*—A physician contracted what he believed to be a chancre; six months after, he married; three children were successively prematurely born: the first lived only a few hours; the second infant was born between the sixth and seventh month, and lived eight hours; the third labor came on in the seventh month, the fetus dead and decomposed. No trace of syphilis was observed in either parent; the father and mother were salivated, and the next child was born vigorous and free from any syphilitic taint.

"*2d Case.*—Seventeen years previous to marriage, a gentleman suffered from syphilis, which he was assured *was cured*, although an impression remained, *on his part*, that the disease had not been completely removed. Both parents were apparently in perfect health: the first child was born in the early part of the eighth month of gestation, was delicate, and lived eleven days; the second birth happened in the seventh month, the infant survived only an hour and a half; the third delivery occurred in the sixth month, when a foetus much decomposed was produced. The husband and wife were salivated, and a living, healthy, small female foetus was born at the close of the eighth month.

"Having related these two cases, Dr. Campbell criticises my opinions, and states—first, that information derived from venereal hospitals is, to say the least, questionable; second, that my field for observation was far too limited, considering that, on an average, not more than six prostitutes in one thousand *conceived* in the course of one year, according to the investigations of Duchatelet; and, third, that opinions based on such data can not be put in competition with the experience of men who have been half a century or more engaged in practice.

"The reader must observe that, if Dr. Campbell admits syphilis as the cause of abortion in the above-cited cases, he will be obliged to believe that two parents, neither of whom have had secondary symptoms, but enjoy excellent health, will produce, not syphilitic children in the sense usually understood by authors, but infants that present no recognised syphilitic symptoms, unless premature confinement or a putrid foetus be considered as such; thus excluding all other causes of abortion, and recognising as the cause a chancre without any of its attendant sequelæ.

"In the second case, he must believe that chancre, unattended by secondary symptoms, will, after seventeen years, show itself in the child, not in the ordinary forms, but in that which an accoucheur affirms is syphilis, consisting in the death of the foetus and premature confinement. This doctrine will, I think, be at once denied by all practitioners who have allowed their patients to marry, and observed the healthy offspring of those who in early life contracted chancres which were not followed by secondary symptoms. In reply to Dr. Campbell's first objection to my opinions, I must repeat that a large number of pregnant women were under my care at the venereal hospitals in Paris, but that *I did not observe this liability to abortion during the seventh month.*

"Dr. Campbell's statement, on the authority of Duchatelet, that only six prostitutes in a thousand *conceived* in the course of one year, appeared so much at variance with what I had witnessed, that I referred to his book, and find, as I expected, that Dr. Campbell has completely misunderstood the French author, who, at the commencement of the chapter ('De la Fécondité chez les Prostituées'), says: 'En resumant toutes les réponses qui m'ont été faites, et ce que j'ai trouvé dans quelques livres anciens et modernes, j'ai du tirer cette conclusion, que mille prostituées fournissent à peine six accouchements*' dans la courant d'une année—which I should translate as follows: 'Judging from the answers I have received, and what I have found in some ancient and modern work, I ought to draw this conclusion, that a thousand prostitutes scarcely furnish six *accouchements* during the course of the year.' He, however, in the next line goes on to say, that, not satisfied with these data, he made further personal investigations; and (at page 233) he gives a table to show that the *accouchements* which take place in the hospitals are on an average $51\frac{1}{2}$, and a few lines farther on he augments it to $63\frac{1}{2}$. At page 241 he adds: 'Tout semble donc prouver que les prostituées sont plus aptes à la fécondation qu'on ne l'a cru jusqu'ici.' I hope, then, Dr. Campbell will now give me credit for having observed on a larger scale than this misquotation would lead his readers to suppose.

* "I have marked the word *accouchements* in the text, as well as *quelques*, and conclude that Dr. Campbell is well aware that the French word is not rendered into English by *conceived*.

" If I understand Dr. Campbell's third objection to my opinion, it is, that none of his juniors ought to dispute his opinions unless he can back it with the experience of half a century. With all deference to the doctor's years, I must, however, remind him that, in these skeptical days, a host of things (the truth of which was formerly never doubted) are now held in disbelief; that a stern array of facts and figures, as well as strict observation of the ordinary course of disease, is now required to defend an old doctrine or support a new opinion; and that the heads of the profession must condescend, like their juniors, to employ these means—and not only count their facts and opinions, but weigh them."

I am, however, ready to believe that syphilis, like many other diseases, may blight the ovum, and then it will be thrown off like any diseased structure, but still I am not disposed to think that syphilis should stand charged with more than it deserves. It is truly a very formidable disease, and commits dreadful ravages, without having to bear the onus of other complaints. My own impression is, that abortion is more frequently occasioned by ulceration of the neck of the uterus (which, again, certain accoucheurs, without the slightest reason, attribute to syphilis, see page 199) than to syphilis itself. But this is not the place to descant on the causes of abortion: my purpose is merely to state that syphilis is not the most common, and that, as the attention of accoucheurs is now called to the subject, I feel convinced that these cases supposed to be induced by syphilis will happen less frequently than they did in the practice of Mr. Whitehead, who states that in two thousand pregnancies one in seven terminated in abortion. Let the young surgeon pause before he believes that mere abortion, with a peeling off of the skin of the foetus,* is caused by syphilis in the parents, unless other corroborative symptoms be likewise met with.

The mother at all the stages of syphilis has been supposed to be able to infect her child with specific disease. Such, however, is an error, as would appear from the following instance, which is important, inasmuch as the symptoms in the mother had become of the tertiary order; the child of which she was pregnant did not become affected with syphilis, and was born and remained perfectly free from the complaint some years.

February, 1845.—Tertiary Symptoms with Relapses in the Mother; no Affection in the Child.—I was in attendance upon a respectable woman living in Half-Moon Crescent, Islington, for tertiary symptoms; she had disease of the bones of the thumb, and tertiary ulcers of the pharynx. Some months after I first saw the patient, and during the treatment, she became pregnant: the child was born with severe ophthalmia, and lost the sight of both eyes; it then had inflammation of the chest. During the period of suckling, the mother took iodide of potassium for a relapse of sore-throat.

June 1.—The mother, who had been nursing her own child, has had another relapse of sore-throat, which is becoming relieved by iodide of potassium, as usual. The child is healthy, with the exception of a cough.

Oct. 2.—The mother has again returned with affection of the throat. Ordered to take iodide of potassium as before.

March 31, 1846.—This patient is again obliged to have recourse to iodide of potassium with benefit. The child has not had any symptoms of constitutional syphilis, and is strong and healthy.

During my late visit to Paris, I was very particular in my inquiries of M. Ricord, as to the influence a diseased foetus would have on the mother during the time it was in the uterus, and participated in the mother's circulation. To make my meaning more clear, let me state a case, several similar ones to

* If the reader turns to the case of Y. Z., page 413, he will find that in the instance of abortion (where the child was doubtless a syphilitic one, and where the ovum was thrown off by fright), the foetus's skin did not peel off, nor present any marks of disease.

which will be immediately described. C., the father, labors under syphilis, marries a healthy woman, D.; before he is quite recovered from secondary symptoms he impregnates his wife, and she gives birth to an infant, who, a few weeks after, is covered with secondary symptoms. Will she or has she been contaminated through this diseased fetus? M. Ricord believes that most commonly the mother will escape all chance of contamination, *but* in certain instances which he has observed, he feels no hesitation in stating that the woman who carries an infected fetus, *may* receive from it the germs of the disease; in other words, she may become infected with syphilitic secondary symptoms through the medium of the fetus, and not receive it directly from the father. In a recent letter in the "Lancet," vol. i., 1848, p. 227, the same opinions are expressed. M. Ricord is reported to have said: "Supposing a female to be impregnated by an infected agency, how will *she* be affected by carrying a poisoned fetus? According to certain well-observed facts, we may infer that the mother can receive the germs of the disease from her child, so that, in such a case, she suffers from the syphilitic infection by the instrumentality of the fetus in utero. It had hitherto been believed that the mother received the infection directly from the father, and that she transmitted to her offspring the diathesis with which she became imbued; but this never happens except the mother has been subjected to the contagion of *primary sores*, and she herself has had an indurated chancre as well as secondary syphilitic symptoms consequent upon such chancre. I am ready to acknowledge that a woman may give birth to an infected child without experiencing any inconvenience herself; the father, in such a case, transmits the poison by reason of the secondary symptoms which are upon him at the time. If he had had *primary* symptoms, he would have diseased the mother directly, and the effect (as before mentioned) may still have reached the child. A man who has constitutional syphilis upon him, of howsoever long standing it may be, should not marry, for his progeny runs great risks; his wife, however, is by no means so much in danger, for the embryo may or may not contaminate her. I well remember a case of this description, where a gentleman with certain secondary manifestations was advised by his medical attendant to postpone engaging in wedlock; he disregarded the advice, married, and, nine months after, he had the mortification of seeing a well-defined eruption upon his child; his wife, however, escaped unhurt."

I have not met with more than one instance in which the mother has been infected in this manner (see page 419), but I bow with deference to my late master, whose opportunities are unequalled of seeing syphilis. He, however, admits the rarity of the cases; and I believe the mother when she becomes contaminated, does so through the primary symptoms contracted from the husband, at least such is the result of my own experience.

Let me here state, that, in accordance with observation, the fetus, though infected by the father, is born healthy, and the complaint shows itself in the infant only some weeks after birth, still we can readily understand the possibility of the mother being infected through the interchange of fluids going on between the fetal and maternal placentæ, which physiologists well know must be very free, although they differ as to the exact structure of the organ.

INFLUENCE OF THE FATHER IN PRODUCING INFANTILE SYPHILIS.

Kirkes and Paget, in their "Physiology," say: "Nothing has shown what it is that makes this fluid [semen] capable of impregnating the ovum, or, which is yet more remarkable, of giving to the developing offspring all the characters in features, size, mental disposition, and *liability to disease*, which belong to the father. This is a fact wholly inexplicable; and is perhaps exceeded in strange-

ness by none but those which show that the seminal fluid may exert such an influence not only on the ovum which it impregnates, but on many which are subsequently impregnated by the seminal fluid of another male. It has often been observed, for example, that a well-bred bitch, if she has been once impregnated by a mongrel dog, will not bear thorough-bred puppies in the next two or three litters after that succeeding the copulation with the mongrel. But the best instance of this kind was in the case of a mare belonging to Lord Morton, who, while he was in India, and wished to obtain a cross-breed between the horse and quagga, caused this mare to be covered by a male quagga. The foal that she next bore had distinct marks of the quagga in the shape of its head, black bars on the legs and shoulders, and other characters. After this time she was thrice covered by horses, and every time the foal she bore had still distinct though clearest marks of the quagga; the single impregnation by the seminal fluid of the quagga had impressed its character not only on the ovum then impregnated, but on the three following ova impregnated by horses."

In the synopsis of the contents of the Museum of the Royal College of Surgeons, the portraits may be seen of these crosses. No. 40 is thus described: "The portraits of the horse, mare, quagga, hybrid and foal, suspended from the lower gallery, opposite the entry to the small museum, illustrate the following 'Singular Fact in Natural History,' communicated to the Royal Society by the Earl of Morton, F. R. S., and published in the 'Philosophical Transactions' for 1821, page 20.

"His lordship, being desirous of domesticating the quagga in this country, endeavored to procure some individuals of that species, but, being disappointed in obtaining a female, an attempt was made to breed from the male, No. 43, and an Arabian chestnut mare, No. 48; the result was the female hybrid, No. 44, which was five years old when painted, and showed her mixed origin in both form and color.

The Arabian mare was subsequently bred from by a black Arabian horse, No. 45, and the produce, namely, a two-year-old filly, No. 46, and a year-old colt, No. 47, though in most respects fine specimens of the Arabian breed, were marked with certain stripes and lines belonging to the quagga, as shown in the paintings; the manes are especially unlike those of the Arabian breed. The third colt, of two months old, is figured in No. 48, and also shows the stripes of the quagga upon the back. 'It is a striking fact,' observes his lordship, 'that so many features not belonging to the dam should in three successive instances be transferred by her to the progeny of a sire who has them not.'

"The following particulars of a fact nearly similar to that related by Lord Morton were communicated to the Royal Society by Dr. Wollaston, and are detailed in the 'Philosophical Transactions' for 1821, p. 23. In the litter of a black and white sow, by a boar of the wild breed, the chestnut color of the boar strongly prevailed: a second litter from the same mother, by a boar of a very different breed, retained many peculiarities of the wild breed, and even in a third litter the chestnut color was to a certain extent evident."

It clearly appears then that the male parent may have great influence on the progeny, and infect it with peculiarities if not disease. Accoucheurs have doubted whether the father could infect the embryo without the mother becoming diseased, and those who admitted the fact, did so generally with great hesitation. In a paper read before the Medical and Chirurgical Society in 1845, I cited three cases, one of which I subjoin:—

Syphilis in Father affecting the Child, the Mother remaining unaffected.

M. H., nine weeks old, was brought to me by its mother on account of an eruption over the whole body; the face presented patches of rosy-colored pap-

vlæ, in some places distinct, in others confluent, or forming irregular circles; here and there over the abdomen the eruption was scaly, but around the eyelids, mouth, and in the folds of the skin of the scrotum and nates, it had assumed the form of condylomata or mucous papulæ; there was considerable irritation of the skin in these situations, apparently dependent on the secretion of these moist papulæ; the child's voice was hoarse, and there was slight discharge from the nose; the palms of the hands presented well-marked spots of a scaly, copper-colored, eruption; emaciation was less than is usually observed in children laboring under syphilis, but that peculiar earthy hue of the skin generally, was very evident.

HISTORY.—The mother states, she married four years ago, and became soon after pregnant, went to the full time without any untoward event, and produced a dead child, which she describes as dark colored, and remarked that the skin peeled off on the slightest touch; during the following year she miscarried between the third and fourth month. On the occurrence of the third pregnancy, no threatening of miscarriage was felt, and the child, my present patient, was born at the full period perfectly healthy. During the third week, the mother observed spots on the genital organs of the child, and they have been gradually increasing up to the present time, a period of six weeks. I can not discover the slightest symptom of primary or secondary disease on the mother, who says she has never had a spot on her own body, and I see no reason to disbelieve her statement. The father states, that about four years ago he contracted chancres, was salivated, and secondary symptoms followed; he again took mercury, and believing himself cured, married, and denies having had any primary symptoms since; but states he has occasionally seen white spots on his mouth and tongue, which have disappeared on the application of burnt alum; has not remarked any spots on his body; there is nothing at present in his appearance to bespeak syphilis, nor can I discover any recent marks of infection.

TREATMENT.—The mother was desired to put the child into a bran bath, to apply an ointment to the affected skin, composed of one dram of unguent. hydrag. nitrat. to three drams of spermaceti, and to give the child a powder containing two grains of hydrag. c. creta every night. This treatment in a few days produced considerable amelioration, and within a month the child was perfectly free from disease, it had regained its healthy appearance, and is now doing well.

I now add another case, bearing most unequivocal evidence of this fact, and could cite numerous others were corroborative evidence wanting, but as the members of the society agreed with me in the opinion, that such cases do actually occur, I should be only tediously occupying the attention of my readers by overburdening this volume with the recital of cases.

Psoriasis Palmaris in the Father, with Hereditary Syphilis in Child, Mother remaining free from Disease.

Jan. 13, 1847.—Y. Z., a remarkably good looking man, called on me to-day, to ask my opinion on his case, which he thus detailed. He is a surgeon living in a healthy neighborhood. He showed me his hands and feet, on which I observed large patches of psoriasis in size equal to half an orange. The ham or copper color very distinct on the scalp, where there is an abundant impetiginous eruption, and the scrotum covered with psoriasis, which renders walking difficult.

HISTORY.—Five years ago—that is in 1842—contracted chancre which was indurated, took a few blue-pills, the induration did not disappear, but the sore broke out again; took a few more pills irregularly and the induration lasted a

twelvemonth. Some months after the appearance of the first sore, secondary symptoms appeared, for which he took sarsaparilla and iodide of potassium with benefit, but suffered from relapses. Three years ago, after being well for four months, he married, with the sanction of one of the most eminent London surgeons. His wife miscarried at the seventh month, not from syphilis (child not marked), but from being frightened by a drove of oxen. After his marriage secondary symptoms broke out on his body, his wife has never been affected. Mrs. Y. Z. became again pregnant, and was confined of a healthy child, but pale. Some two months after its birth, mouth and bowels became affected, nipples of mother remained healthy, condylomata appeared at the anus of child, the affection was treated and cured with blue-stone; the child, now thirteen months old, has, according to the statement of its father, stains of an unequivocal kind on its forehead. The mother is again pregnant, and what will be the state of the child is the father's inquiry. I hesitated not a moment in stating that this eruption in the father was syphilitic, and would not undertake the treatment except my patient would lay up and employ mercury. This he was unable or unwilling to do, on account of his professional labors.

Jan. 21, 1849.—I saw this gentleman to-day; he says he was unable to follow my advice, and has not taken one grain of physic since last consulting me. At present there are small irregular spots of scaly psoriasis palmaris, which have lost their coppery hue; on the upper part of the left temple there are spots or stains which are faint, but unmistakably syphilitic, the affection of the scrotum is well. He tells me he has lost his first child with hydrocephalus. The one with which his wife was pregnant when he consulted me was brought down, that I might judge of its condition, and a healthier child I never saw, and he says it never has had a day's illness. His wife has remained perfectly well, and is again pregnant. As far as his own general health goes, it is excellent; has had scarlet fever during the last year, but did not observe his syphilitic complaint aggravated by it, although he thinks press of business and worry have an influence in augmenting it. This gentleman feels confident that his disease is syphilitic, and is very slowly wearing itself out, and trusts that it will not again appear in his offspring.

We may then, I think, lay it down as a rule, that a father laboring under secondary symptoms, will contaminate the ova which he impregnates, although his wife may remain perfectly healthy; and it is an error to suppose that a husband laboring under secondary symptoms will first infect his wife and through her the embryo. Contamination must take place at the time of impregnation, showing that the sperm, in common with the mucous and dermal structure, is in a diseased state, but not in such a diseased condition as to be able to contaminate the mother. Such cases as these bear out my own experience, as well as fully corroborate that of M. Ricord, that secondary symptoms are not inoculable, nor transmissible except hereditarily; experiment and observation corroborate this opinion; as shown by reference to page 422, where the subject is fully discussed.

I think it may be distinctly laid down that the father can not infect or influence the fetus through the membranes; he may, as we have seen above, infect the embryo at the moment of impregnation, but not subsequently, except through the mother. I shall suppose the following case. E., a healthy father, impregnates F., an equally healthy mother; if E. subsequently is affected with indurated chancre, or secondary symptoms, the child will be born healthy, unless E. has communicated the chancre to the mother, then the case comes under the category of those to be alluded to directly.

The case of Y. Z., cited at page 413, however, proves that the male may have about him marks (though slight) of secondary symptoms during so long a period as four years, and yet even after that time impregnate his wife with an infected

child. In many cases cited by authors, a father is said to beget infected children after an almost indefinite length of time (see Dr. Campbell's case, cited at page 409). I have never yet met with such instances, nor does M. Ricord allude to them, but I can readily believe (in fact it is compatible with the observations made at page 412), that as long as a man has relapses of secondary symptoms, however slight, he *may* beget infected children, but I must still insist that a male will not propagate unhealthy children, unless he or his wife is suffering or has lately suffered under secondary or primary disease; in all the cases I have witnessed of infantile syphilis such has been the case.

This is a question of vital importance in private practice, and deserves the gravest consideration of my readers. Patients recovering from syphilis are constantly asking their surgeon, may I marry? or when may I marry? The case of Y. Z. is a striking instance of the sad results of marrying too soon after the disappearance of secondary symptoms; and if any one will take the trouble of turning to the prognosis of secondary symptoms, page 327 (where the subject of relapses is discussed), he will find authorities quoted for the belief, that in spite of all treatment, mercurial or non-mercurial, a guaranty can not be given that secondary symptoms will not return. In reply to this, it may be asked, if such be the fact, how can we sanction the marriage of any one who has had indurated chancre or secondary symptoms? I answer these pessimists, that surgeons are but the exponents of the knowledge of venereal disease, gained by close observation of its laws, and if relapses are the recognised sequelæ of its abode in the system, and of the diathesis having gained possession of the constitution (so as to produce occasional outbreaks after long incubation notwithstanding treatment) surely the surgeon is not to be blamed, nor should he be arraigned for not being able to control Nature's laws, one of which appears to be, that no remedial means will eradicate syphilis when the diathesis is once fully set up in particular constitutions and in certain *exceptional* cases. If observation teaches us these truths why conceal them? It is true, worldly interests might induce the *expedient surgeon* (pardon the term, reader) to withhold the results, but surely, he who candidly writes for his profession is not justified in concealing the truth, and if he does, these deplorable results may painfully convince his patients that he is ignorant of his profession.

When a patient comes to me who has been laboring under chancre, and says he is about to marry, I feel no scruple in telling him the state of science on the subject. If no mercury has been used for the cure of primary symptoms, and three or four months have intervened without the occurrence of secondary symptoms, I sanction his nuptials; but if mercury has been given for an indurated chancre, I am not content with the lapse of so short a time, I require at least six months' quarantine; if the health remains good, and circumstances render marriage, in the opinion of the patient, absolutely necessary, I no longer put my veto upon it, but I do so with reluctance. Should relapses, however slight, have occurred, I withhold my sanction, the responsibility becomes too great: and daily observation of the deplorable consequences of following a different course obliges me to advise a patient not to marry. Let a surgeon pause ere he gives a clean bill of health to such cases.

A medical man can not be too guarded in examining these patients. Negligence, the desire of contracting an advantageous marriage, and various other causes, will induce a patient to conceal the history, and then thrust the blame on the surgeon, who omitted to warn him of the consequences.

ON THE INFLUENCE OF BOTH FATHER AND MOTHER.

When a surgeon is called upon to give an opinion on the case of a child that soon after birth shows unequivocal marks of syphilis, at the same time that

constitutional disease is present in both parents, the various questions mooted in preceding chapters are no longer of the same importance, particularly when both father and mother admit that they have suffered from primary or secondary disease; but if the father does not think it proper to acknowledge the share he has in the infection, or if he denies having suffered from syphilis, or if he will not appear, the surgeon may be left in great doubt on the cause of the infection, as the following case will show:—

Infection of the Infant, Denial of the Father and Mother that the Disease could be Syphilis.—Tardy Avowal of the Correctness of the Diagnosis.

June 27, 1845.—A married Irishwoman, twenty-seven years of age, came to consult me about her breasts, which were very sore, as well as about her child. The nipple appeared retracted; breasts flaccid and small. Around the nipple are large ulcerated patches of condylomata, but not much raised, although as large as a five-shilling piece. On the body, particularly, on the sternum and shoulders, are some scaly patches, presenting a coppery hue. On the arms there is slight roseola, presenting the same tint, with impetigo on the scalp: the mouth and throat free from disease. At the time of consulting me that popular remedy, duck-weed, was the only application she had applied to the breasts.

HISTORY.—States that the nipple became sore a month ago, arising, as she believed, from the child sucking. Denies having had any discharge or sores. The eruption on the body only appeared, she states, a few days ago. Her husband was laid up for a week, some time since, with a pain in the lower part of the abdomen, but had no medical advice as far as she knows.

The CHILD healthy; no spots on the body, but at the anus I noticed several condylomata.

HISTORY.—The child is one year and a half old. States that some buttons of small-pox have, on a previous occasion, appeared on the body; for which the child was under treatment by a medical man, and the spots now seen are the remains of them.

July 9.—The mother's breasts are now nearly well, but on the back of the neck unequivocal marks of secondary symptoms are to be met with. After some hesitation she alluded to a soreness at the vulva, and an abundant crop of small and red condylomata, accompanied with discharge, appeared on examination. She assures me these are of recent date. The husband denies having had syphilis, and so does the wife.

Aug. 1.—The wife now states that the husband has confessed to having had chances, and the mystery is cleared up.

The following case is not unfrequently seen in practice: A dissipated husband communicates syphilis to his wife and child; says nothing to her, but goes under the treatment of a stranger and becomes cured. When the family surgeon sees the infected mother and child he can obtain no history of the disease of the father, who positively denies having had the disease, except many years ago before his marriage. Some good easy men are induced to believe him, and thus obscurity is thrown around a case otherwise simple.

In some or other of these various ways, syphilis in married life is surrounded with a thousand causes of difficulty, and the surgeon must have some tact, if he anticipates arriving at sound conclusions, and, for the domestic happiness of families, must screen the faults of the husband, and may innocently lend himself to deception; but let him, at any rate, convince himself where the malady commenced; it is often absolutely necessary in the treatment, and will often prevent an innocent nurse or foster-child from being unjustly accused of communicating a disease which arises from a different source.

INFLUENCE OF THE NURSE.

Can the Child be infected through the Nurse?—The milk of the nurse has been supposed to play an important part in contaminating the child, and many persons treat with great contempt the opinion of any one who would advance an opposite doctrine. If, however, we carefully investigate cases as they occur actually in practice, and analyze the symptoms, we find no corroborative evidence of this generally-admitted fact, but, on the contrary, must allow that a woman actually laboring under syphilis may suckle an infant without communicating the disease to her foster-child.*

If we take instances of women who have contracted syphilis from their husbands during their pregnancy, and who give birth to children that afterward become syphilitic, and cite them as cases where the disease has been communicated through the milk of the mother, and not through the hereditary taint—if, I repeat, we are satisfied with this sort of evidence, then it may be asserted, perhaps, that the disease is contracted in either one way or the other; but this loose way of establishing a highly-interesting physiological fact, can not be admitted any longer, as its belief gives rise to the most deplorable consequences, both to the peace of families and the treatment of the little patients, and must therefore be counteracted by all facts really bearing on the question. Instead, then, of citing an unlimited number of facts which admit of the double interpretation, either that the disease has been contracted by hereditary taint or by the milk, let us look at the rarer cases, where the mother has been infected with primary and secondary symptoms after the birth of the child, but during the period of suckling, and do we find her communicating to the child the disease she herself is actually suffering under? I answer, positively not, and refer to the following case as a type of others.

Case showing that a Mother laboring under Syphilis may Suckle her Child, without inducing the Disease in the Infant.

June 20, 1846.—Mr. Lane, knowing the interest I took in syphilitic diseases of infants, desired a female then under his care to call on me. M. M. stated that she was married in February, 1843, confined of first child January 6th, 1844; in May, 1844, an eruption like scarlet fever appeared over her body, and she had rheumatism, and has been under treatment, on and off, ever since. This patient brought her child with her, and it is very healthy, although she has suckled it herself; it has never had a spot on its body.

The mother presents the following symptoms: The back, neck, and body, sprinkled over with spots of well-marked lepra and papulæ of a decided syphilitic character. Slight iritis has come on within a few days. The gums are spongy and saliva copious, but there is no fetor of the breath. She has not taken mercury for some months. The tongue is covered with small, flat, painful ulcerations, where the teeth come in contact with it. This state of things has existed some time, in spite of iodide of potassium and acids. (I have seen several similar cases.) Mr. Lane gave calomel and opium, in consequence of the iritis. The peculiarity of the case is, that the child has never had secondary symptoms, showing that the child suckling an infected woman does not necessarily contract the disease.

Jun. 25, 1847.—This patient has been taking the iodide ever since, and the eruption became nearly well, but has now broken out again, and a few spots on

* John Pearson says: "We have not seen one clear and decisive case of the disease being given by an infected nipple."—*Manuscript Lectures*, page 95.

"Infected nurses have suckled the children without communicating the disease."—*Loc. cit.*, p. 97.

the head and mouth are now visible ; gums swollen and red. Child perfectly well.

March 7, 1847.—The mother returned to-day. States that she took iodide of potassium for some months, until quite well, as she thought ; about May she last took medicine, no pills ; has been in good health ever since. On 2d of August, confined of a healthy female child, who remained well until about Christmas, 1846, when she observed redness about its anus and calves of the legs ; used salve and castor oil ; got well immediately, and remained well until the commencement of February (but acknowledges now that the child had the snuffles two months after its birth, which have continued ever since), when spots appeared on its eyebrows, chin, and mouth, but now says there was redness about mouth for two months.

PRESENT APPEARANCE.—The second child, now seven months old, is a fine, healthy, plump infant. No spots on body, limbs, anus, or head ; eruption confined to face, where we observe raised tubercular patches on nose, mouth, and chin of a pinkish hue, but very characteristic of syphilis ; is troubled with the snuffles, and slight blisters on the tongue.

CONDITION OF MOTHER.—No soreness of nipple nor spots on body. On the edge of tongue there are faint white spots ; gums blue, and edges covered with tartar : general health good. Has not taken any medicine, except an opening draught, since May.

STATE OF HUSBAND.—*March 10.*—Quite well at present. On the right hand two patches of eczema impetiginodes. Gives a long rambling account of having had syphilis before marriage, but denies having been a sufferer from chancre since.

The wife has since returned, and has discovered that her husband's account is false ; and states he now admits that he contracted disease during the time she was confined of her first child.

Cases like the above are very instructive ; they give very good specimens of the difficulties which a medical man has to contend with in obtaining a history which runs over so many years, and when there is a disposition to conceal the truth. They explain how it is that a first child may be born healthy, and why, in subsequent pregnancies, the infants may all be infected.

I may further cite the case of M. H., page 420, to show that a nurse actually laboring under syphilis may suckle a foster-child for a fortnight without ill consequences. I would likewise call attention to the case of the patient, related at page 410, where a mother laboring under tertiary symptoms suckled her child with impunity.

Dr. Hennen, in his Military Surgery, says, page 558, "I know it to be a positive fact, that a nurse with secondary symptoms may suckle children with perfect impunity to them."

Now, although I allow that secondary symptoms are not communicable, I by no means recommend that a wet-nurse should be selected who is laboring under the disease, all I wish to maintain is, that syphilis can not be thus communicated to the child ; common sense dictates that the milk of such women can not be advantageous to the infant.

M. Ricord, whose experience is not equalled by any surgeon in Europe, has never seen instances ; and in the many cases I have been consulted about in London, in which this supposed cause has existed, I have always been able to point out the sources of error, and bring the guilty party to light. In opposition to the cases I here cite, I am well aware that at least fifty instances may be collected from journals, clearly (in the opinion of their authors) showing that the milk of the nurse can contaminate the child ; but in the absence of full details, and considering the chances of deception which will be dwelt on shortly, I must still believe that the milk of the mother or nurse will not contaminate

the child. Further experience may alter my opinion, and I shall be ready to become a convert when such instances are found.

INFLUENCE OF INFECTED FŒTUS ON ITS MOTHER.

I have attempted to show in preceding pages that the father may alone infect the child independently of the mother; I hope I have made it equally clear to my readers, that a mother who may contract indurated chancre, or become affected during her pregnancy with secondary symptoms (even though the father be perfectly healthy), may be confined of a child that will, soon after birth, present unequivocal symptoms of syphilis. I have cited instances, showing that if both parents are affected, the child must also necessarily become diseased, and I detailed my experience on the possibility of a child becoming infected through its nurse.

Before proceeding further, I must say a few words on the influence which a fœtus, begotten by a syphilitic father, may exert on the mother who up to this period has been perfectly healthy. My own experience teaches me that a mother may carry a child which will subsequently show marks of syphilitic infection, to the full period, without herself suffering from syphilis. Experience further shows me that she may suckle such a child the usual period, and yet remain free from the disease which may severely attack the child, which inherits it from the male-parent. Of this fact no longer any doubt remains, for even the late Mr. Colles (whose opinions on these matters I have been unable to quote hitherto, as they differ almost entirely from my own) is obliged to admit the fact, that the mother is not necessarily affected when suckling her own offspring, which is affected with syphilis. He says, page 304: "One fact well deserving our attention is this, that a child born of a mother who is without any obvious venereal symptoms, and which, without being exposed to any infection subsequent to its birth, shows this disease when a few weeks old, *this child will infect the most healthy nurse, whether she suckle it or merely handle and dress it;* and yet this child is never known to infect its own mother, even though she suckle it while it has venereal ulcers of the lips and tongue." I have placed a portion of the extract in italics, for, as I have previously stated, my experience is opposed to the fact, that a nurse will become infected; and supposing it a well-authenticated and observed case, I am at a loss to understand why a mother may suckle a syphilitic child with impunity and not a nurse; but why one and not the other should become affected he deigns not to enlighten us, and I think it would be difficult for any one else to do so; for surely, if the child's mouth or secretions can infect the nurse, very probably the same effect would be produced on the mother. In the absence, then, of corroboration by others, and in face of what I have witnessed and here detailed, I must be excused for entertaining my own opinions, and doubting the correctness of observations which tend to show that a syphilitic foster-child can infect either mother or nurse.

M. Ricord admits with me, that a mother may give birth to a syphilitic child without herself becoming subject to the disease; but his experience goes to prove that a woman pregnant of a child whose blood is contaminated with syphilis hereditarily acquired from the father, may, and often actually does, contaminate the mother's system. I have met with a very few such cases; probably the following is one of these. I the more readily admit the statements, inasmuch as the intimate relation of the fœtal and maternal circulation can be readily imagined to allow of the passage to and fro, by endosmose and exosmose, of certain principles which, though insensible to our reagents or senses, nevertheless must be present in the circulation. But although I admit the possibility of this source of infection, in consequence of M. Ricord having observed it, I

would caution practitioners against attributing the disease in the mother to this source alone, particularly when we know for a fact (which M. Ricord himself most readily admits) that infection is not necessary, and that during intra-uterine life the poison or virus is in a dormant state, seldom showing itself at the time of birth, but only some weeks after, when the infant is exposed to the changes of the atmosphere.

Case of Infected Fœtus contaminating the Mother, probably through the Placental Circulation.

July, 1850.—A gentleman, twenty-eight years of age, came to me to-day complaining of a sore tongue. On the left side of the organ a white spot as large as a threepenny-piece, looking like a cicatrized ulcer, has broken out; on the lip there is a similar spot, but the surface is quite level.

His HISTORY is the following: Two years and a half ago he contracted syphilis, secondary symptoms followed. During the time he labored under the complaint his wife became pregnant, went her full time, and the child was born healthy; a few weeks after birth it showed symptoms of secondary syphilis, spots at the corners of the mouth, and on the palms of the hands; the mother, who had been perfectly healthy up to this time, then (some months after her confinement) had unequivocal marks of secondary symptoms, no sore breasts, but psoriasis palmaris.

Here, then, is an instance of a father infecting the child, and the child contaminating the mother, the contamination showing itself in the mother twelve months after the embryo had been infected. This case is the more important, as it occurred in a person who had read all that had been written on syphilis of late years, and was an excellent observer.

INFLUENCE OF INFECTED INFANT ON THE WET-NURSE.

Admitting, then, as I do, that a child in utero may infect its mother, I disbelieve in toto in the possibility of a syphilitic child (that is to say, one laboring under secondary symptoms) infecting a wet-nurse. I have been frequently consulted about cases which, in the opinion of some, render this mode of infection certain. I subjoin an instance.

Case of a Nurse becoming affected with Syphilis from suckling a Child supposed to labor under Secondary Symptoms.

On the 14th of July, 1846, Mr. Gay asked me to see M. H., a respectable-looking female, about twenty-five years of age, unmarried. On the face there are stains of a coppery hue; on the throat there is redness in patches, hardly amounting to superficial ulceration; on the body, spots may be seen in a more advanced stage, slightly scaly. Mr. Gay says, about the vagina they amount to aphthæ, but not condylomata; on the palms of the hands the blotches are very red and scaling. On the right breast, close to the nipple, is a red cicatrix, as large as a pea, which is slightly indurated; the other nipple is healthy. There is fever, great pain in the joints, particularly the right knee.

HISTORY.—Three months ago was confined; enjoyed good health, so does the father of the child. Five weeks after confinement, was recommended by Mr. Rawlins, of Francis-terrace, Kentish Town, as wet-nurse to Mrs. L., and she placed her own child with a friend, and took the situation. When she first took charge of the foster child, observed it to be in a dreadful state; without putting any leading questions, M. H. stated that it was affected about the genitals and anus with eruption; had what was called the thrush in its mouth, and the snuffles in its nose; suckled Mrs. L.'s child four weeks, when she was

dismissed because the child became so bad that Mr. Rawlins recommended change of milk. A few days after leaving Mrs. L.'s—that is nine weeks after confinement, and about three weeks since—observed the sore (the cicatrix of which is still evident) on the right breast, which was burnt with caustic by a medical practitioner, and a gland in the armpit became inflamed. After leaving Mrs. L.'s situation, she nursed the child of a Mrs. S. for a fortnight, and left, for fear of injuring the child. A fortnight ago, the eruption she is now suffering from broke out all over the body. Has thus nursed her own child only four days since the appearance of the disease. It is a pretty little infant at present quite healthy, and three months old.

As there existed no doubt of the syphilitic character of the eruption on M. H., and as the case presented several points of interest, Mr. Gay determined to try the palliative treatment, and saline medicines were ordered, with five grains of Dover's powder, to be taken at bed-time. I undertook to investigate the case, as it might be supposed from M. H.'s statement, we had to treat an instance of a nurse diseased by a syphilitic child. Had not all my former experience contradicted such a supposition, I might have been contented with the history; as the parties were so respectable I determined to write to Mr. Rawlins, with whom I was previously acquainted, and test the accuracy of the nurse, M. H.'s statement. Mr. Rawlins at once agreed with me in the importance to families of thoroughly sifting these cases, and appointed a day for me to see the child who was said to have communicated the disease. A more healthy boy it would have been impossible to have seen. The parents had been apprized by Mr. Rawlins of the nature of the nurse's statement, and were anxious to prove themselves innocent of any imputation which could be brought against them. Mr. Rawlins tells me he selected M. H. as nurse; she at that time presented all the marks of health, with a good breast of milk. Mrs. L.'s child was suffering under thrush, and some erythema of the genital organs, not uncommon to infants whose bowels are disordered; but as to syphilis, his little patient never had any trace of it, nor had the parents, who are very respectable persons. He has never given the child mercury, and dismissed M. H., because the child did not thrive, and as he suspected some latent disease. The nurse Mrs. L.'s child now has is quite well, and has remained so since M. H. left her situation. Mrs. L. states, that she observed spots about the angles of the nose and mouth of the nurse M. H. before she quitted her service. Mr. Rawlins was anxious to see the present condition of the nurse M. H., and on doing so had no hesitation in declaring her complaint syphilitic, and speaks of her altered appearance in the few weeks since he had seen her.

Wishing to see Mrs. S., in whose service M. H. had subsequently been, I called, and found Mrs. S. regretting M. H.'s leaving her service; she did not say her child was ill, and I did not wish to alarm Mrs. S.; so I conclude that her child has not suffered from suckling, during a fortnight, M. H.'s milk.

July 17.—M. H. has lost that muddy-looking complexion, and stains on face are disappearing; says pains in limbs and knees are much better; M. H.'s child's bowels are very relaxed, but motions healthy. Ordered to continue, and some powders were given to child.

21.—Much the same. Complains of pain in hands where the epidermis has peeled off; no induration remains around the breast. The child has become altered in appearance; its face is pale, and its motions are green and loose. Recommended mother to wean the infant and continue the same treatment; the child was ordered powdered chalk and opium, three grains, three times a day.

OBSERVATIONS.—At the present moment, when the pages of *The Lancet* detail cases of children infecting nurses, and vice versa, a few observations may not be inopportune, particularly as it seems to be a very prevalent opinion that

infection can occur in this way. As far as the result can be tested by inoculation, secondary symptoms are not inoculable; within the last few days I have again tested this in the presence of several gentlemen. A man was suffering under tubercular syphilitic affection of the arm; the tubercles ulcerated. With a lancet we scraped off the epidermis on a healthy portion of the arm, and applied a piece of lint, soaked in the secretion, to the abraded surface, and maintained it there for twenty-four hours. Slight irritation, followed by ulceration, came on. This ulcer healed immediately the irritating secretion was removed, proving that the sore depended upon the simple irritation of the secretion, and upon nothing specific, just as an issue is kept up by means of peas, or any other foreign substance. Doubtless I shall be told, that although inoculation may not succeed, practitioners observe indubitable cases where infections could not have occurred in any other way. It is impossible for me to reply to such cases, otherwise than to point out the numerous sources of error, which *may* not only depend upon the surgeon, but upon the patient or friends. I have (see page 232 of this treatise) related an *aggravated case of eczema rubrum on the genital organs, mistaken for syphilis*. Within the last six weeks I have witnessed a similar case. The instance I now publish proves how easily a practitioner might have believed in the existence of this form of infection. Without denying the possibility of its occurrence, I have never yet been able to meet an instance which I could attribute to contagion of secondary symptoms, and I must hesitate before yielding my opinion, knowing as I do from experience the difficulties that beset the question; they are only cognizable to those who treat syphilis. I give one example which has lately fallen under my notice. A medical practitioner wished me to see a female, recently married, laboring under condylomata. To prevent family disputes, I desired the husband to call upon me. On examining him, there was no trace of syphilis, primary or secondary; and he then broadly hinted, that since his marriage he had heard of his wife's immorality previous to his acquaintance with her; this she subsequently acknowledged. Now had she been able to infect her husband, most practitioners would have disbelieved the husband's statement, and pitied the unfortunate wife. This case proves what experiments induce us to believe, viz., that condylomata and secondary symptoms are not contagious; and I must repeat, that hitherto every instance I have seen corroborates the results of inoculation.

As too many instances can not be cited in confirmation of any disputed point, I subjoin another *case showing the impossibility of infecting the system through secondary symptoms*.

"A poor girl came under my care at the Islington dispensary with severe condylomata around the anus; she was in the habit of sleeping with her mother in the only bed they possessed, which was scarcely large enough for one individual; the result was, that the secretion from the condylomata of the daughter came constantly in contact with the upper and anterior part of the thigh of the mother, as long as they slept together; the result was, an unhealthy-looking sloughing sore on this part of the mother's thigh. Several persons who saw this case at the time, predicted that this was an instance clearly proving that secondary symptoms were inoculable, and I admit my faith was somewhat shaken, but by dint of good food and cleanliness, the sore in the mother quickly healed, and no symptom like syphilis appeared on the mother, although I watched her case with great interest for a long time afterward. Here, then, is another source of error; for the secretion of irritating condylomata may, like any other offensive matter when applied to the skin of a poor half-fed and ill-clothed creature, produce ulceration of a most unhealthy kind, and be readily mistaken for syphilis, and that such errors have often occurred there can be no doubt."—*Lancet*, August 1, 1846.

Irish surgeons do not coincide in these opinions. The statements they

make, however, are very startling, and it would appear as if syphilis conveyed from the child to the nurse is a common affection in Ireland. In a late trial which took place at Cork (see "Medical Press," vol. xv., p. 252), Dr. Bull mentions having seen it occur in more than a hundred instances. The late Mr. Colles believed in this source of infection, and such combined experience deserves the greatest consideration; still, among the numerous instances which have fallen under my notice, I have in vain looked for such cases. Believing that these gentlemen can not have been one and all deceived, I live in the hope that through some such source as this we may one day arrive at a knowledge of the origin of syphilis. Instead, then, of treating such cases as fables, I would encourage every species of investigation into this obscure subject, as to whether the disease here spoken of was syphilis or some other complaint. I have already, on various occasions in the course of this volume, alluded to the question, and related a number of anomalous cases which have from time to time come under my notice. These induce me to think that a variety of animal poisons, allied in many respects, but still widely differing from syphilis, may be introduced into the human system, and give rise, particularly if treated with mercury, to all sorts of equally anomalous secondary effects. Thus I have seen, in particular constitutions, phagedæna attack a simple sore and commit dreadful ravages, giving rise, even when not treated with mercury, to peculiar eruptions, which show that the system is poisoned. I have seen such cases treated by mercury (which has been thought to be an antidote), give rise to the most serious consequences: the mercury has re-poisoned a system which was saturated already. I have seen bad meat produce secondary symptoms, which it has been very difficult to distinguish from syphilis (see page 242). I have seen an animal poison in a blacksmith's wife, which put on many of the characteristics of syphilis, and which we could not trace directly to farcy, but which we suspected must have had its origin in some such source (see page 241). Look at the effect of dissecting wounds on the system, of chancre, of cancerum oris, of the secondary effects of typhus fever, scarlet fever, &c.; poison the system further, under the idea that it is some dregs of syphilis that you are treating, and who will say that the surgeon is certain what disease he has under his care, particularly when his patients are ill-fed, half-clothed, and sleeping in the worst-ventilated, badly-sewered quarter of a town? Who, after reading the case of the poor creatures described at page 417, will not hesitate before he calls everything syphilis, or believes in the secondary forms being contagious, and capable of being transmitted from the infant to the nurse?

Lastly, the child may be infected by sores (primary ones) when passing through the vagina of its mother, supposing her to be suffering from them. This form of infection is, however, so rare, that I have never witnessed it; and, admitting the possibility of such a mode, I must generally discredit this source for the following reasons: The child is usually shielded with a covering of secretion or mucus, which, generally speaking, protects the surface; and, as abrasions of its skin rarely take place during delivery, I see no probability of the chancrous matter inoculating the child, particularly if it be washed, and the ordinary modes of cleansing it be employed. But although it becomes infected rarely at birth, I believe children may contract primary syphilis from sleeping with infected persons, or from using cloths with which others have wiped their sores. The following is a good illustration:—

Indurated Chancre in a Child, followed by Condylomata, contracted by sleeping with a Brother.

May 26, 1847.—Mr. Avery desired this patient's mother to call on me, as there were some obscure points about the case. C. G., a little boy seven years

of age, applied to the Charing-Cross hospital, with condylomata, which were supposed to be hereditary. A close investigation of the case rendered the diagnosis very simple.

Present Condition.—A large condylomatous growth on both sides of the anus, a patch of similar kind on the tongue, with enlarged tonsils, and hair falling off; child pale, but in other respects pretty healthy. Not satisfied with these appearances, I made the child strip, and examined him carefully. On the prepuce I found an indurated chancre, the mother not having mentioned anything about it.

HISTORY.—Five months ago the child complained of pain in going to stool, and the parish surgeon gave him some treacle and sulphur. The mother, finding the child getting worse, applied elsewhere, and was told the child had piles. She then applied to the Charing-Cross hospital. On being closely questioned, the mother states she observed something the matter with the child's penis two months since, but, not thinking it of any importance, never mentioned it to any of the gentlemen she consulted; thinks it may have been there a long time. On inquiry, this child slept with an elder brother, who had been a patient at the Charing-Cross hospital in the months of August and September for some form of venereal disease.

The case at once became clear. Instead of this being an hereditary complaint coming on in a child seven years of age, it was simply secondary symptoms with the primary ones still existing; but, supposing the chancre had not existed, hereditary syphilis might have been said to break out seven years after birth.

August 3.—Mr. Avery again sent this child to see me; had been taking rhubarb and magnesia occasionally, and using zinc wash. The condylomata at the anus were well, but they still cover the tonsils, the glands on the outside of neck much enlarged, induration on penis gone, general health pretty good, but aspect pale.

January, 1848.—There remains one white patch on the tonsil; no other secondary symptom; child pale.

DIAGNOSIS OF SYPHILIS IN INFANTS.—Although in preceding pages the subject of diagnosis has been frequently alluded to, I shall, for the convenience of my readers, recapitulate some of the most important points; and in doing this, I must call attention to the fact that, in forming an opinion, a surgeon may be deceived by the statements relative to the child which are made by the mother, the father, and the nurse. The diagnosis is rendered still more difficult, in consequence of symptoms having often disappeared from the one while present on the other, or in consequence of the parties having been under the care of different practitioners: is it surprising, then, that the difference of opinion spoken of in the course of this chapter should arise—and that anything but unanimity should exist among surgeons relative to this important branch of syphilis? My present opinions are founded upon carefully-made observations on cases where many of the parties have been under my care, noting the particulars, and comparing them with instances which are cited, and in which form the missing links in the chain of evidence are wholly invalidated, although given in good faith, by the witnesses not being aware of the sources of deception, or never allowing for them.

In recapitulating, then, some of the difficulties of diagnosis, I shall describe them successively, commencing with those which may occur in the

Mother.—Great difference of opinion may exist on the nature of the disease which is called secondary symptoms. If the reader will turn to page 324, in which the diagnosis is alluded to, almost every form of eruption will be found to have been mistaken for syphilis; and, if the surgeon has not an opportunity

of examining the parent, but depends upon the history or description of the disease which she has suffered under, great errors may be committed. What these errors may be, and how to avoid them, I need not here state, as they have been fully described at page 324. We have likewise stated (see page 412) that the mother need never have suffered from syphilis at all, in order that the child be infected.

The diagnosis drawn from particulars given by the

Father, often contradicts instead of corroborates the surgeon's opinion. He may have had syphilis years ago, or he may even deny ever having had the complaint, or have lost all trace of it at the time of examination: such a history only renders the diagnosis still more difficult. Again, the legal father may be free from the complaint, the child having been begotten by another. The disease may have been contracted from some other source, as occurred in the case mentioned at page 423, where both parents were free from the disease, which was contracted after birth. Lastly, the disease in the father, like that in the mother, may not be syphilis at all, but only resemble it in some particulars. These are some few of the doubtful questions which arise, and require to be solved before coming to an opinion on the case.

The diagnosis of the disease in the

Child may present many difficulties. It is an undoubted fact that a large proportion of children said to be suffering under syphilis present no such disease. The difficulty of diagnosis is thus acknowledged by Rousseau, who says: "The different cutaneous eruptions, the lesions of mucous membranes, all those affections which are commonly in France called *gourmes*, whatever be their situation, bear an incontestable similitude to those which are proper to constitutional syphilis, and which may deceive a surgeon little accustomed to treat these diseases."—*Archives Generales*, tom. xv., p. 148.

Rousseau says he depends greatly, in forming his diagnosis, on the peculiar yellow color of the skin, which he thinks of more value than the copper color of the eruption. He places great value on the cracks which appear on the hands and feet, and considers them rarely deceptive when present, which, however, he admits is not always the case; and, lastly, the combination of several syphilitic symptoms occurring at the same time.

I have seen the different affections of the skin in children so often mistaken for syphilis, that I have no hesitation in saying that this is one of the most frequent causes of error. My readers may recollect a very striking instance of eczema related at page 232, which was mistaken for constitutional syphilis.

By turning to page 8 of the Introduction, the skeptic will see the case of a little girl who presented most extensive and foul ulcerations of the labia, thighs, and anus, the result of bad food, neglect, and dirt, which under other circumstances might have been readily mistaken for syphilitic disease: the complaint, however, readily got well under attention to cleanliness, water-dressing, tonics, and good food.

Another very common error is, to consider as syphilitic those severe affections of the mouth which are known as aphthæ or thrush, particularly when any suspicious symptoms exist on the skin. I noticed these cases in the first edition of my book, and I have now still greater reason to believe that in many of the cases where a nurse is said to have contracted syphilis from sucking syphilitic children, the disease has been only thrush. This appears to me particularly to have been a source of error in Ireland. Modern microscopical observers have detected parasitic growths in the centre of the cells of swollen epithelium in thrush, a complaint to which ill-nourished children or those brought up by hand are subject; and it is an admitted fact that these complaints are contagious, probably through the sporules conveyed by pap-boats, nipples, and spoons. It is not the place here to describe thrush; I must refer my read-

ers to treatises on the subject; but I would advise surgeons not hastily to attribute to syphilis results due to thrush alone, a complaint which often complicates the former disease.

Hennen relates a case, in his "Military Surgery," which goes far to prove that aphthæ are not only contagious, but capable of producing constitutional symptoms. He says: "I am intimately acquainted with a physician who contracted an aphthous affection of his lip by taking a last farewell of a most respectable lady who was far advanced in phthisis, and whose lips were affected with those aphthous eruptions which so often arise in the latter stages of that disease. In a short time the point of his tongue was covered with small and very painful ulcers, extremely like minute chancres; and, in some weeks after, he became affected with a scaly eruption of the hairy scalp. I had occasion to particularly examine him at about three months after the first appearance of the ulceration of his tongue: the eruption was gone, but from one part of the scalp the hair was dropping very fast."—(Page 566.)

I have lately seen a boy, twelve years of age, suffering from worms, with aphthæ on the tongue, patches at the corners of the mouth, and spots of lepra on the back of the head, which might have been mistaken for secondary symptoms had there been any suspicious circumstances attending the case, but happily they were not present.

It follows, then, that amid this mass of conflicting evidence, the surgeon should not rashly diagnose syphilitic affections in children; the probable sources of error are so many, that it becomes very difficult to arrive at a correct diagnosis. Still, syphilis in children presents usually the train of symptoms spoken of above, which, when they exist, can give rise to no hesitation: they are as characteristic as it is possible for one disease to be from another: the only point to be then ascertained is, from what source was the affection contracted? Here, again, in many instances, all is clear and patent: but on many other occasions, the reverse follows, and the truth can only be arrived at by a large share of tact, and weighing well the evidence which can be obtained. In these delicate domestic matters let the young surgeon be cautious how he raises the suspicions of families, particularly when he has incomplete evidence of a specific disease.

PROGNOSIS.—In preceding pages I have shown that if a man marries before he has been completely cured of constitutional syphilis (see pages 412-13), the ovum which he has impregnated may become blighted, and be thrown off by the female aborting. If the wife goes her full time, the infant will probably soon after birth present the characteristic marks of syphilis mentioned at page 405. Observation shows that it is not necessary, for the transmission of hereditary disease, that the father should at the time of marriage have been suffering from well-marked secondary symptoms: if these have been but recently cured, and the syphilitic diathesis has not been destroyed (see page 412), the male may transmit the specific disease to his offspring. Such being the case, the prognosis always becomes very serious; and, as we mentioned above, the surgeon should give his sanction to such a man's marriage with great hesitation, and, as stated at page 415, at least six months ought to pass before a patient is allowed to marry, after the disappearance of all traces of constitutional syphilis.

When such a parent has already begotten syphilitic children, and neglects to submit to a course of treatment, subsequent children may or may not be infected (see case of Y. Z., detailed at page 413). In such instances the prognosis will be always unfavorable, but no doubt can exist that in good constitutions the disease has a tendency to wear itself out, although we have no syphiliometer to measure the quantity of virus existing in the system. In the absence, however, of any such test, we may generally infer that if relapses do not recur, and if no traces of the disease can be discovered in the man, after a careful

examination extending over a period of six months, the offspring will not in future be contaminated. Such a prognosis, however, should not ever induce the surgeon to sanction cohabitation, as the disease (when mercury has been given) may remain latent in the system for a lengthened period, and many accidental circumstances (alluded to at page 320) may cause it to break out when we least expect it. This should be pointed out to the patient, who will then be in a measure answerable for the consequences if they arise.

The prognosis has been looked on in much the same light by John Pearson, who says: "Women who have been affected with lues, although apparently free from the disease, have frequently unhealthy children. It sometimes happens that the first child is very much diseased, the second less so, the third rather unhealthy, and perhaps the fourth has no complaint, from the disease having, as it would appear, been worn out."—*Pearson's Manuscript Lectures*, page 101.

In fine, all we can say is, the slighter the symptoms and the longer the complaint has lasted in the parents, the less probability there will be of the offspring becoming contaminated.

Although, then, the prognosis must be generally viewed in an unfavorable light, still every now and then cases occur, showing that, notwithstanding the syphilitic diathesis still exists in the father, it does not necessarily follow that syphilis should be developed in the offspring, as the following case will show.

Instance of Constitutional Syphilis in a Father, not producing Disease in the Children.

1850.—An old fellow-pupil called to consult me about a severe sore-throat, which had annoyed him for some months; on each tonsil there was superficial ulceration, covered with an unhealthy secretion, bearing very characteristic marks of syphilis. He told me that he contracted syphilis in 1842, eight years ago; he took mercury; secondary symptoms followed, he again had recourse to the mineral, as well as hydriodate of potash; the disease has occasionally returned, and again receded under treatment during the last eight years.

Knowing him to be a married man, I asked if his children were affected; he told me he had been married three years, that he has two as healthy children as can be seen, and they have never borne any trace of the disease, which he is well aware he is suffering from; this case proves that an infected father does not necessarily contaminate his children.

My patient again took iodide of potassium with bitters in large doses, as prescribed at page 375, and soon recovered. I have since seen him, and his health is now quite re-established.

The prognosis of hereditary syphilis which may have appeared in the child, depends upon a variety of circumstances; when secondary symptoms occur in an otherwise healthy infant, and its case treated early, the most favorable results may be expected; but if the child is puny, the mother in bad health, or the disease been already allowed to make great progress, we must not give a very favorable opinion. In even the very worst forms, the complaint may be entirely cured, provided the parents have the ordinary means of comfort, and will follow the directions of their surgeon; but, unfortunately, these poor little children are often neglected, and they die from want of care and breast-milk, victims to syphilis, mercury, scrofula, and neglect. It is from a combination of these causes that the mortality is so great as shown by the annexed table of the registrar-general. Relapses, as in adults, are by no means uncommon, particularly when insufficient treatment has been employed, or proper treatment neglected.

INFANTILE SYPHILIS.

TABLE showing the Ages at which 203 Children died from Syphilis in the Years 1846-'48, in the Metropolis. Extracted from the Weekly Returns published by the Registrar-General.

AGE AT DEATH.	DURATION OF THE DISEASE.					TOTAL.
	Under months.	Not men- tioned.	Congenital.	Under one month.	Under two months.	
1	18	19	3	--	--	40
2	15	31	11	--	--	60
3	11	13	4	4	1	33
4	5	17	1	3	--	26
5	6	7	--	--	1	14
6	2	7	--	--	1	10
7	2	1	--	--	1	4
8	1	1	--	--	--	2
9	1	2	--	--	--	3
12	2	7	--	--	--	11
Total,	63	105	19	10	--	203

Fatal cases of syphilis in children are much more common in the metropolis than the profession is aware of. Some few years ago the registrar-general, at my solicitation, commenced noticing in his weekly tables the exact age at which children perished from syphilis, as well as the immediate cause of death. In consequence of his kindness, for which I can not too publicly express my thanks, I am enabled to lay before the profession the above novel and interesting table.

We thus find that 203 infants under one year of age perished from syphilis in the space of these three years.

The most fatal period is when the infant is still under two months,* sixty such children perished. The next largest number, namely, forty, died before they were one month old. Thirty-three died before they were aged three months. Supposing the child survives this period it may linger on and perish at any time between this and one year; but it is surprising to see how few fatal cases occur after the infant has reached its first birthday; and we may suppose that if, by means of treatment or a good constitution, the child survives the first year, it may be reared.

Medical men appear to have very erroneous notions of the words, *congenital syphilis*: as I understand the term, it should mean that the child was born with marks of the disease upon it. But I presume from the number of infants which are said to have labored under congenital syphilis, that the registering surgeons meant to express only that the disease was hereditary; for the experience of all surgeons who have seen much of venereal children, proves that an infant is rarely born with traces of the disease, as shown at page 405.

Before concluding my observations on this table, let me be allowed to pause, and draw attention to the fate of these little martyrs. There are many exceedingly well-intentioned persons who think that no checks should be placed on syphilis; although disposed to support every sort of charity or institution, they turn with horror from a Lock hospital; such institutions, they say, encourage immorality. This class of persons go even further: they will subscribe to asylums where repentant Magdalens are received, but they will not assist in maintaining an institution which shall succor these poor little innocents who soon after birth become a living mass of corruption, linger a few months, and then perish in the proportion we have seen above.

* Trousseau thinks the disease generally proves fatal when it appears within the month after birth but is curable when it occurs two, three, or four months later.—*Gazette des Hopitaux*, 1848, p. 79.

TREATMENT.—In describing the treatment of an hereditary disease like infantile syphilis, it is not alone sufficient to dwell on the remedies to be given to the child, this forms but one link in the chain of the indications to be fulfilled; and, in imitation of the plan I have pursued in writing this chapter, I shall first allude to such particulars as apply to the

TREATMENT OF THE MOTHER.

Supposing a female to be pregnant who is laboring under secondary symptoms, I should advise exactly the same treatment to be followed as if she was in an unimpregnated state. Observations on a large scale have taught me that the fears of the surgeon who dreads to give the pregnant woman mercury are chimerical. It has been a very prevalent notion in our profession, that syphilis requires different treatment in pregnant women from what it does in others; yet I am at a loss to know in what this difference consists, or what treatment is fit for the one, which is not equally good for the other. Among the numerous cases of syphilis I have seen in pregnant women, the symptoms have been exactly similar; abortions, it is true, occasionally take place; the child is sometimes born dead; at other times sickens a few weeks after birth; and this happens in cases where no medicine has been given. If this, then, is the usual course of syphilis in pregnant women, the surgeon must be prepared to treat the disease as if pregnancy did not exist.

When a pregnant female presents constitutional symptoms, I treat them on the general principles laid down under the head of treatment of secondary symptoms, page 330; but before commencing mercury I always satisfy myself that the female is herself actually suffering from symptoms which the surgeon can characterize as syphilis. The mere fact of the occurrence of repeated abortions or having had successive dead children is not, in my opinion, alone to sanction a specific treatment. It is true that, having ascertained the cause of abortion, its treatment should be undertaken, not with a view of eradicating syphilis (which may not exist) but for the purpose of preventing abortion, and if mercury is thought necessary on this score, let it be given; and this brings me to state that, given in appropriate doses, mercury is borne quite as well in the pregnant as in the barren female, provided the same care is taken to avoid any of the ill consequences the mineral may produce.

I should have no hesitation in producing the judicious effects of the mineral, either by frictions or taken internally, and I should continue it as long as found necessary. I would not, however, give it so as to affect the gums at the moment of parturition. Consulted at this late period, its employment must be postponed, but if the surgeon be called in at the earlier stages of pregnancy, let him not be deterred from giving a female mercury, if the indications of disease call for its employment, merely on account of the existing pregnancy.

Supposing that after our patient is confined, and convalescence established, symptoms become apparent in the mother of unmistakable syphilis, I should pause before I would submit her to a course of mercury, particularly if she suckled her own child.

Although pregnant women bear mercury well, nurses and those suckling should not take the mineral, if it be possible to avoid it. I find it diminishes the quantity, and alters the quality, of the milk; induces diarrhoea in the child, and aphthæ in its mouth: these last act as irritants on the nipple of the nurse. The peevishness of the child causes bad nights to the mother, whose health suffers, and thus mercury acts injuriously on the child, the child on the nurse, and the disease on both; hence the greater mortality in infancy than at any other period.

Supposing an unhealthy nurse or mother is not suckling her child, there is

INFANTILE SYPHILIS.

then no reason why she should not take mercury, or undergo the treatment which may be thought necessary, and which has been alluded to at page 330.

TREATMENT OF THE FATHER.

The preceding pages will have prepared the reader for the few observations I have to make on the subject of the treatment of the father. If secondary symptoms are present in him, I should recommend general treatment; but by referring to the case of Y. Z., page 413, it will be seen that, even without any treatment at all, the disease has a tendency to wear itself out; and although the first child may be born diseased, still subsequent ones need not necessarily be infected. The surgeon, however, would not be justified in sanctioning the father abstaining from treatment; but he should be recommended to submit to it just as any other person who labors under secondary symptoms. Let the surgeon, however, pause before prescribing mercury or general treatment in those cases where only suspicion is entertained that abortions or infection depends upon some latent syphilitic disease in the father. To credit some recent works, accoucheurs have not the least hesitation in salivating father, mother, and child, as well as nurse (I only wonder they do not recommend the same treatment for the grandmamma), on the merest suspicion of syphilis; but such treatment is not creditable to the age we live in. It is far better only to treat syphilis when we meet with it. Let the surgeon be assured he will have enough to do in curing constitutional syphilis when it presents itself with its unmistakable characters, and until this is effected, a divorce *à thoro*, although not *a mrsá*, will be necessary, otherwise the wife may be impregnated with an infected fœtus.

The treatment of the father is not, however, always to be guided by the preceding rules; he may have taken mercury and iodide of potassium, and yet these medicines may have failed in curing the disease, as occurs in certain exceptional cases, where the syphilitic diathesis has been fully established. Are we to recommence the treatment, and continue it *ad infinitum*? The recital of the following case may prove interesting as explaining my meaning.

A gentleman contracted syphilis some years ago, and thinking himself cured, married and infected his wife (so he says), and the statement was corroborated by his medical adviser. (May not infection have taken place as in case cited at page 420?) She miscarried twice. He took mercury and iodide of potassium. During the next year another miscarriage from fright. In January, 1850, his wife was confined after four days' labor, the pains being sluggish, of a weakly child that lived only a few hours. The medical attendant (who had never seen the lady before) did not suspect syphilis, and the child was in no way marked (I particularly inquired about this fact). The father still bears the slightest trace of a whitened patch on his tongue, but no other symptoms, and has had none for at least a twelvemonth; his lady nervous and anxious to have a family, but presents no traces of syphilis. What do I recommend? is the question put by the father. As he had taken repeated courses of mercury, and as a living child was born, I consoled him with the recital of other instances in which the disease showed that it had nearly exhausted itself, and I gave him hopes that this would occur in his case, and that his wife would rear her next infant; but I would not sanction another course of mercury. To this he agreed, and the result has not yet come to my knowledge.

TREATMENT OF THE INFANT.

When a child is brought to me soon after birth, as yet presenting no marks of syphilis (although one or both parents are said to labor under secondary

symptoms), I do not think it advisable to treat the infant as if it were suffering under the affection, as may be gathered from the preceding pages. The child may escape, particularly when the mother has been recently infected (see page 417), and the surgeon had better wait until symptoms of syphilis occur in the infant, before he commence giving mercury to it. Although the mineral had better not then be resorted to, precautions should be taken to prevent the ill consequences which may be likely to arise. I should, in such a case, abstain from all preventive treatment in the case of the mother, in the way of pills, powders, or ointment; but I am in the habit of recommending her to leave off suckling the child, not in the belief that her milk could contaminate the infant, but because it must but imperfectly nourish the child; and if the little patient has any hereditary diathesis, this is most likely to be developed under the use of unwholesome milk. If, however, a wet-nurse can not be procured, I should prefer the mother suckling her own child to bringing it up by hand, as I think the infant runs less danger from taking the milk of its mother laboring under syphilis, than by being brought up by hand.

Before a surgeon sanctions the bringing up a child by hand, let him pause and consider the mortality which attends children thus nourished. All authorities agree that the risk is very great. One of the most striking instances with which I am acquainted, is that cited by L'Abbé Gaillard, in the "Annales d'Hygiene Pub.", vol. xix., page 40. He says: "At X. no foundling is suckled; all that are received are brought up by hand, and the reason given is, the fear of infecting the nurses with syphilitic diseases." All steps have been taken to remedy the mortality which ensued among the children but without avail, until the authorities decreed that recourse be again had to wet-nurses. He goes on to say: "The mortality during the year 1834, when the children were attempted to be brought up by hand, was frightful. Of 127 foundlings so fed, only 29 remained alive at the end of the year." In another hospital, he says that 233 died out of 362 received in the same year; and extreme cold and warm weather appeared to increase the mortality.

But I may be asked, would you, Mr Acton, venture to place an infant that you knew was born of syphilitic parents (although as yet it had shown no marks of syphilis), at nurse with a healthy woman? Would you not dread its infecting her as well as her own children? Would you incur the responsibility which must attach to you as well as to the parents, should such infection occur, as occur it will? for it has been proved (say my adversaries) that infection has followed so frequently that no doubt any longer can exist in the mind of accoucheurs on the matter, take for instance a case which occurred in Cork in 1845.

As these are the prevalent opinions entertained at the present day, and as my own view of the subject has not yet obtained that general sanction which the question requires, I shall at some length discuss it. Let me first call my reader's attention to the case below cited, which is a type of others met with in practice. Divested of all its technicalities, the case is simply this (see *Cork Reporter*, vol. xiv., 1845):—

Mr. and Mrs. Cottrel, a respectable mechanic and his wife, were married in the year 1843, both apparently in good health. Mr. C. acknowledges that he was affected with primary and secondary syphilis some time previously, but had been perfectly cured before his marriage.

In September, 1844, their child was placed at wet-nurse with Julia Walsh, a laborer's wife, a woman of good constitution and character. It appears, from Dr. O'Connor's evidence, that the child was in wretched health, and was observed to have some sores on the mouth, around the anus, and on the scrotum. In his last letter he likewise states that Mrs. Cottrel, before giving the child to nurse, was under treatment for an intractable sore on the breast, which took

several months to cure. Dr. M'Evers says, on the contrary, that the child, when sent to nurse, was apparently in perfect health, with the exception of a sore mouth, which, from the description, appeared to have been of a simple aphthous character. It had no sore nor blotch on its body.—(See also *Dublin Med. Press*, vol xv., page 252.)

Already we find a difference in medical testimony, and we presume that at this period no regularly-qualified medical man had seen the case.

The report says : “*In a few days* the nurse, Julia Walsh, became diseased, and she diseased her husband ; in fact all the family became diseased, and the child was returned to the mother, Mrs. Cottrel.”

Dr. O'Connor states in his letter : “ Shortly afterward, the nurse having perceived a sore on her nipple, and that the rash on the child became more general, went to a quack, who pronounced it to be chicken-pock, which he would readily cure, and gave her twelve pills which made her mouth sore. Mrs. Walsh's alarms not being quieted, she remonstrated with the father of the child on her condition. He accompanied her to the man who was in attendance on her (I suppose the quack), promised to pay him for curing the nurse and child, and at the same time put his own wife under the quack's care.”—*Lancet*, vol. i., 1846, page 691.

Now Dr. M'Evers states another view of the case. This sore, aphthous mouth, in Mrs. Cottrel's child produced a common sore nipple on Mrs. Walsh's breast ; she, getting alarmed, and having heard something whispered of the parents, took it for granted that she herself was diseased, and immediately applied to a quack, called in the report a herbalist, who plied her with his nostrum, mercury, and hence arose the train of subsequent symptoms.

Dr. M'Evers, moreover, states that he examined the nurse's (Walsh's) mouth, and considered the sores therin not to be syphilitic, although pronounced by others to be such, but to result from the over-use of mercury. At the time of the trial Mrs. Walsh was in good health, with the exception of the mouth and throat, the whole mucous membrane of which appeared studded with ulcers and abrasions, apparently from mercury.—*Lancet*, vol. i., June, 1846.

The nurse (Julia Walsh) brings an action against Mr. Cottrel, and the preceding conflicting evidence is given. The assistant-barrister (Mr. Baldwin) took time to consider what judgment he should come to, and subsequently Cottrel, the father, consented to pay a sum of money agreed on between the parties, so that no decision was ever come to by the judge.

Now, this is the most tangible instance of a nurse supposed to be infected by a syphilitic child, but the evidence on which it is founded is most unsatisfactory ; and so it is in all instances in which cases are recorded of nurses contracting diseases from their foster-children. In the early part of the case all depends apparently upon particulars gathered from non-medical persons. At the time the child and nurse were seen by qualified surgeons mercury had been administered by a quack, and I can readily imagine the difficulty that presented itself in deciding whether the disease was syphilitic or mercurial.

The value of the medical evidence may be best judged of from the following observations on the case in a leader of the *Lancet*, vol. i., 1846, p. 636 :—

“ Surely in an important case like this, which is likely to regulate future decisions, a medical practitioner might be at least expected (if ignorant of the present state of science), to come prepared by the perusal of authorities, before giving an opinion ; had he done so he would have found that ‘there is a dispute.’ John Hunter did not believe in these supposed contagious cases ; M. Ricord, and more recently Mr. Acton in this country, positively deny the contagion of secondary symptoms ; and they found their opinions on the negative results derived from numerous experiments in inoculating with the secretions of all forms of secondary symptoms ; but the barrister might have seen that the

whole question hinges on the diagnosis, and it would appear that neither the child nor the nurse ever had syphilis; and such would have been, probably, the opinions of Drs. O'Connor and Bull, had they seen the case before the plaintiff had been drenched with corrosive sublimate by the 'herbalist' impostor.

"We can not close these observations without alluding to the following words by Dr. Bull, one of those who gave such positive evidence of the contagion of secondary syphilis: 'He himself had observed the disease *one hundred times* in nurses who got foundlings to nurse.' Is Dr. Bull aware that he is one of those lucky individuals who has seen what no other mortal, Irish or English, ever before witnessed? We beg to inform him that John Hunter met with a few *supposed* cases, which he details; Ricord alludes to one or two; and others, who have had much greater opportunities than Dr. Bull of seeing syphilis, have rarely witnessed such cases. Might not he find, on comparing these cases, that a hundred was not the exact number? Might not he discover that he has classed as syphilis cases similar to the one reported by Mr. Acton in the *Lancet*, for January, 1845,* which was *ezzema rubrum*? And if he sifts his evidence, and takes into consideration the ignorance of his patients, the inattention to their symptoms, and the occasional immorality of wet-nurses, he may pause before he again states that he has met with *a hundred such cases*."

I may, I think, then, state that it is still an open question, whether a syphilitic child can infect a wet-nurse. My own opinion is that no instance has yet been produced which at all proves the possibility of its occurrence. I have been consulted about many, but have been always able to prove, either that the diagnosis has been incorrect, or that the disease has been contracted from some other source, and that some deception has been attempted, for the purpose of obtaining money or to conceal the cause of infection.

I am happy to say that nearly all the testimony of those who have had the greatest opportunity of seeing syphilis, is in favor of the opinion that secondary symptoms are not capable of being transmitted. I have cited numerous cases in which this has been tried and failed, under the most favorable possible circumstances. Let me recall a few. At page 422, I have detailed the case of a girl suffering from condylomata at the anus, who slept with the mother, and I stated that the irritation of ulcerated condylomata coming in contact with the mother's thigh produced a sore, but no secondary symptoms.

In the case of Y. Z., mentioned at page 413, the affection of the scrotum produced no effect on his wife, although cohabitation took place, and she was confined of two children. At page 242, a case is cited showing other errors which the surgeon may fall into. On the other hand, diseases very different from syphilis may be transmitted. Hennen in his Military Surgery, at page 566, says: "A child with an aphthous affection of its mouth, will often communicate a most severe disease to the nipple of its mother, capable of being propagated to another infant, and of exciting severe constitutional disturbance." Again, page 558, Hennen states, "I know it to be a positive fact, that a nurse with secondary symptoms, may suckle children with perfect impunity to them." Ricord denies in toto the possibility of a nurse becoming infected with syphilis by suckling an infected child. He cites the following instance in his work on Inoculation, page 508, which proves that a nurse may suckle a truly syphilitic child and her breasts become ulcerated, but notwithstanding she herself shall receive no contamination, nor her own child either.

Now, suppose any meddling surgeon had given this nurse mercury, so as to impoverish her blood, her body would probably have presented a spurious case of secondary symptoms, and her diseased milk might have affected the foster-child. Such are the risks we run of seeing a simple case made very obscure

* The case is detailed at page 232 of this treatise.

by bad treatment and indiscriminate diagnosis. But I will translate the case in full, that my readers may judge for themselves.

"God . . . Euzalie, 28 years of age, came into hospital on the 23d March, 1834, No. 10, Wet-Nurse ward.

"This patient states that she has never suffered from primary syphilitic affection; her husband has always enjoyed good health; she is the mother of four children, and during the period of suckling has never suffered from a bad breast.

"Four months ago she took charge of a foster-child, the infant was very thin, but had no affection of either the mouth or any other part of the body, nor wound nor ulceration of any sort. Three months later the infant presented on its forehead and anus, large elevations of the skin, the surface became purulent and covered with scabs; the infant in addition presents on its body spots covered with scales; these, in the situation of the buttock and calves, assumed the appearance of deep ulcerations. During six months, God. Euzalie continued to suckle the child, but its disease increased daily, and the infant was then taken back to its parents, and ultimately died.

"Up to this time the nurse presented no form of disease; but eight days later on the nipples of both breasts cracks showed themselves, one only on the left nipple, four on the right. Notwithstanding this, she continued during fourteen days to suckle her own child which had never ceased to enjoy excellent health. The breasts were dressed with opium ointment (one dram to four ounces), and an astringent wash; the patient finding, notwithstanding the treatment, that the affection of the breasts was getting worse, determined to apply to the hospital.

"On both sides, on the breast and on the nipple, we observe ulcers presenting a gray surface, the edges perpendicular, irregular, and presenting all the characters of syphilitic ulcers.

"March 26.—We inoculate the right thigh with the pus taken from the sore on the right breast, and the left thigh with matter taken from the left breast. The breasts are dressed with opium ointment.

"March 27.—The inoculated points are red.

"March 28.—No pustule appears on the inoculated points. The sores on the breasts are treated with simple dressing.

"April 6.—The sores getting clean; much better.

"April 12.—The bottom of the ulcerations is now nearly level with the surrounding parts.

"This patient is obliged to leave on account of business, but returned shortly after. One deep crack alone remained, with the matter of which we again inoculated the left thigh, but without producing any result; the crack was washed with lot. sod. chlorinat, and a week after the patient went out well."

Pearson says, in speaking of the contagion of secondary ulcers, &c.: "We have carefully collected a few facts, but *have not been able to arrive at absolute conclusions*. There have been many instances of nurses who had given suck to children who had a disease in the mouth, having first a sore on the nipple, then enlarged glands in the axilla, and afterward blotches and sore-throat. The child had probably no appearance of the disease till some weeks after birth. It may be concluded that all these cases are not venereal, since we have cured many patients with sore throat and blotches from this cause without mercury. It more frequently happens that they are not, than that they are venereal; and we have been assured, that after secondary symptoms had existed several weeks in other parts of the body an ulcer had formed upon the labia by means of which a sore has been produced in another person; but this is so uncommon an occurrence that it is more likely the sores were actually chancres."—*Pearson's Manuscript Lectures*, p. 83.

Children thus affected (he is speaking of sore throat and other secondary symptoms) have appeared to communicate the disease to women who suckled

them. We have cured several women in whom the disease could be traced from no other cause, and whose symptoms would yield to no other mode of treatment but mercury.—*Loc. cit.*, p. 100.

That great authority John Hunter, failed not to remark on these doubtful cases. He cited several instances in his chapter, headed Diseases Resembling the Lues Venerea, commencing p. 475; Palmer's edition. It is impossible for me to find room for the details; those anxious to read them must refer to the book itself. At page 478, he says, after seeing the case, he did not conceive it to be venereal; all medicines were left off, and the patients recovered.

At page 479, he adds, after noting another case, "The disease seemed no longer to increase, and in twelve or fourteen days after this, entirely disappeared without taking any medicine, except a few ounces of the decoction of bark."

In a third case, he adds, "She got well without taking any medicine." And these are the opinions of John Hunter, who says page 477, "These cases being all derived from one stock, show as much as possible that new poisons are rising up every day, and are very similar to the venereal in many respects, although not in all."

A modern writer, Trousseau, speaks thus hesitatingly on the subject: "Do not observations exist which lead to the belief that these local lesions (fissures of the lips) are transmitted to the nurse by direct inoculation, and produce in her alterations of the same kind, sometimes so severe as to destroy the point of the nipple?"—*Archives Generales*, vol. xv., p. 165.

Yes, we reply, such cases do exist; but it is by no means proved that they arise from syphilis, as in Ricord's case cited on last page. Let the surgeon be very cautious in attributing all these contagious diseases of the mouth or nipples to constitutional syphilis.

We believe that such cases may be classed under two categories. In the one, the sores have no specific character; they are the result of irritation and the contact of the diseased secretion of the child's mouth with an irritable nipple. Such instances are not followed by secondary symptoms. The second category includes those cases where the nurse has suffered under syphilis, although she may have reasons for denying it, or motives for concealing it, wishing to attribute it to a sickly child she has taken in to nurse; such cases are very frequently followed by secondary symptoms, and may give rise to the supposition that the child was the cause.

In the full conviction, then, that an infant's well-being depends upon being suckled by a healthy wet-nurse instead of a diseased mother, the next question arises, what is the responsibility which a surgeon incurs in placing such an infant at nurse. To answer this, I have looked into the most popular works on Medical Jurisprudence, and having met with no notice of the matter, I submitted a series of questions founded on the preceding evidence, to Dr. Taylor, who has, in the kindest manner, given the following important opinions:—

"DEAR SIR: I have below given to your questions as full an answer as the circumstances, yet known regarding the point in dispute, appear to me to admit of. I am, yours very truly,

"W. Acton, Esq.

"ALFRED S. TAYLOR.

"*The Alleged Transmission of Syphilis from Child to Nurse.*

"A woman, acting as wet nurse to a child, born syphilitic, contracts what she supposes to be syphilis as a result of suckling the child, and sues the parents for damage to health, &c., thus sustained.

"Before she could recover in such action, it must, however, be clearly proved by evidence satisfactory to the court and jury; 1, that the disease under which she was laboring was really syphilis; and 2, that she could not, by any possibility, have contracted the disease in any other way.

"If, as it is alleged, syphilis can not be thus transmitted from child to nurse, and no such case has ever been met with by any authority on the subject, this would be strong evidence for the defence; and if supported by good medical opinions, it would probably lead to the non-suiting of the plaintiff (the nurse).

"If it could be shown that the disease in the nurse was not syphilis, but some other affection, or that, being syphilis, it might have been acquired by the nurse in some other way, and not as a result of the act of suckling the diseased child, then in either case the plaintiff could not recover damages.

"Her case may, however, be supported by good medical and circumstantial evidence. Strong medical opinions might be given that the disease in the nurse was really syphilis, and that it might be transmitted from child to nurse. Again, the witnesses for defendants (the parents) although they might not have met with a case in which the disease was transmitted by suckling would probably, in such a novel question, find great difficulty in swearing that its transmission under the circumstances was *absolutely impossible*. As cautious men, and having a due regard to the abstruse nature of 'infection,' they would probably confine themselves to swearing that they had never met with nor heard of such a case, and to the best of their judgment and belief it could not occur. This would not suffice to defeat the plaintiff's claim, if it were otherwise well supported.

"In a conflict of medical opinions, and when direct proofs are wanting, a jury is commonly directed to look to all the circumstances irrespective of medical evidence. If the case stood as above supposed, and the plaintiff was of excellent moral character, and there was no reason to believe that she could have contracted the disease in any other way, the jury would probably find in her favor.

"The recommendation of a wet-nurse by a medical man would not, in my judgment, affect the right of the woman to claim compensation from the parents, since they are the parties who hire her, and must be responsible for the results of such hiring. Whether the parents would afterward have a right of action against the medical man for recommending them to employ a wet-nurse, knowing the child to be syphilitic, is another question. In order to recover in an action for damages against him, it must be proved, that by such recommendation he showed himself to be grossly ignorant and unskilful in his profession. He might, however, quite innocently and without any just imputation, of ignorance or unskillfulness, make such a recommendation; because the fact of syphilis being thus transmitted is a *quæstio rexata*. He may have believed, *bonâ fide*, that the disease could not be thus conveyed from child to nurse, never having heard nor met with such a case: damages could not therefore be fairly claimed of him, because he had acted to the best of his judgment, and at the most it could only be alleged against him, that he was guilty of a venial mistake into which nine tenths of the profession would, under the same circumstances, have fallen.

"ALFRED S. TAYLOR, M. D., F. R. S."

Such being the state of the law, I thought it advisable further to inquire of Dr. Taylor, if the parents' and surgeon's responsibility would not be best cared for by frankly stating to both parties the state of the case; and his reply is so satisfactory that I publish his note, which now renders the surgeon's course very clear.

"3 CAMBRIDGE PLACE, Feb. 3, 1849.

"DEAR SIR: If a nurse were fairly warned by a medical man of the possible risk she incurs by suckling a syphilitic child, in the event of any disease appearing in herself, she could not recover damages against the parents. She would stand in the position of a consenting party.

"For the same reason, the parents' would have no ground of action against a medical man who suggested to them the possibility of infection; while, at the same time, there would be but little fear of its transmission. If they, after this candid statement, employ the nurse, they do it at their own risk and on their own responsibility.

"The proper conduct for a medical man to pursue in such a case to avoid all legal liability, is to state to the nurse and to the parents, in the presence of each other, the alleged possibility of infection, and he must give his own opinion, whether for or against this view. If, after this, any disease should appear in the nurse, there can be no ground of action on the part of the nurse against the parents, or of the parents against the surgeon. All parties would be acting voluntarily, and taking upon themselves the risk knowingly.

"It is, of course, medically advisable that a syphilitic child should be withdrawn from the mother, and put to a healthy wet-nurse.

"I am, my dear sir, yours very truly,

"W. ACTON, Esq."

"ALFRED S. TAYLOR.

Guided, then, by the recommendations above given, the surgeon should procure a healthy wet nurse. To prevent any deception, or give the nurse any chance of falsely charging the parents or medical man with having deceived her, let the surgeon carefully examine the nurse, and let him warn her that sore nipples are very liable to occur, and desire her to apply to him the moment the breast becomes in the slightest degree affected, as the irritation of the child's sore mouth may readily produce chapped nipples, not in virtue of anything specific, but in common with aphthæ and other simple remedies.

I need not remind my reader that he should not jump at the conclusion that the disease in the nurse is syphilitic, nor need he give her mercury, but treat the case as one of ordinary sore nipples.

Nurses are often very suspicious and gossiping, and if the least suspicion attends the case, others will be consulted, and quacks may prescribe, and, as witnessed in the case cited at page 432, alter the character of the disease very much. The judicious practitioner will attempt to prevent all this mischief, and having obtained a healthy desirable nurse, the sooner the child commences its treatment the better (provided always, the child presents well-marked traces of syphilis), but not until a clear diagnosis has been made.

I have been several times consulted, whether a nurse would recover damages; and in all the instances I have advised the parents not to be prosecuted, for in all these cases I have pointed out the weak points, and in all the instances my advice has been followed, and the cases have not come on for trial. In acting on the above recommendations, I have carried out my own convictions, and, I trust, spared the distress of mind which these exposures would have caused, and prevented several cases of perjury.

To return, however, after this long but necessary digression, to the treatment of the infant which is placed with a wet nurse, supposing no secondary symptoms have appeared, precautionary measures alone should be taken, and the general health attended to. The child's mouth should be constantly watched, and, on the slightest suspicion, it may be cleansed with warm water; so that, the little parasitic plants, which form in thrush, should not remain in contact with the mucous membrane; if, in spite of these measures, thrush appears, the local applications of borax and water, one scruple to the ounce, or nitrate of silver, commencing with a quarter of a grain to the ounce, may be used.

As in adults, the skin must be acted upon, and the greatest cleanliness enjoined; warm baths twice a week should be used; and the child had better be confined to a large airy room with a fire in it in winter, and even in summer fresh air should not be too freely admitted. In my own practice I now never

give mercury internally to syphilitic infants ; and I have found no benefit from the iodide of potassium. Mercury, even the hyd. cum creta, so frequently gripes or purges a child, that its use scarcely ever can be continued the necessary length of time ; and it should therefore not be recommended, particularly when we have so excellent a plan as that of the mercurial belt.* The nurse should be desired to make a flannel belt, or a flannel roller may be bound round the child's waist. On that portion of the flannel next the skin, a small portion of blue ointment may be applied every day, and the movements of the child tend to cause absorption of the mineral.

Care must be taken not to allow the ointment to get rancid, but cleanliness and warm baths will check any disposition to eczema, which is by no means an uncommon affection, unless due precautions are taken.

The effect of this remedy on the infant is soon very apparent ; its general appearance alters for the better, and the eruptions rapidly disappear. Under these circumstances the ointment must be continued ; salivation is not to be feared ; and as convalescence returns the quantity may be diminished, but still should be continued for some length of time, in order to avoid all chance of relapse, which is as common in children as in adults. When the remedy has been administered for a sufficient length of time, it is surprising with what little inconvenience to all parties the disease appears, when a healthy wet-nurse is employed and the mother does not suckle her infant.

In recommending a wet-nurse to be engaged, I have pre-supposed that the parents of the infant are in circumstances allowing the expense. In the public practice of dispensaries and hospitals this is out of the question, and the surgeon has then to consider what other course he can pursue. As far as the treatment of the infant is concerned, no doubt ever exists in my own mind, and I always employ the belt, in preference to the use of mercury given internally, for reasons stated above. Even if the mother is very much diseased, I think it better not to treat her with mercury at present, but allow the child to suckle her for some few weeks ; for if mercury be given to the mother her milk undergoes changes which it is not easy to detect except as far as it produces less nourishment for the infant, which frets, grows thin, and is subject to diarrhoea. As to the old notions of thus affecting the child through the mother's milk, I have long given them up for reasons above given. Should the child suckle an infected mother, the disease in the infant declines, provided mercurial frictions be employed ; but in a few weeks it becomes a question for the surgeon to consider, if he may not, in dispensary and hospital practice, substitute diluted warm cow's milk for the mother's breast ; and if this can be done, the infant should be weaned, and the child may be brought up by hand. But when we consider the great mortality in children so brought up, the surgeon should hesitate before recommending such a course.

As soon as the child can be weaned, the mother should undergo general treatment ; but her case no longer is a special one, and mercury or iodide of potassium must be used on the general principles which regulate our treatment in constitutional syphilis.

The case of the father comes next to be considered. If he present any constitutional symptoms, or may reasonably be supposed to have infected the infant, general treatment must be resorted to ; but I never will sanction that indiscriminate manner of giving mercury on suspicion that the parents are diseased, because abortions take place, or dead children are successively born. The judicious practitioner will investigate the cases, and attempt to ascertain the cause of miscarriage first, and not hastily resort to mercury.

* Pearson recommended a scruple of mercurial ointment to be rubbed on the child's body nearly every day for five or six weeks. "Children," he adds, "bear mercury so well, that there is less danger of giving too much than too little."—*Man. Lec.*, page 102.

FORMULARY.

CAUSTIC INJECTION IN GONORRHœA.

R.	Argent. Nitrat. Crystal	gr. x.
	Aquaæ	ʒj.
M. ft. inject.		(See pages 63, 175.)

CAUSTIC INJECTION FOR CYSTORRHœA.

R.	Argent. Nitrat.....	3ij.
	Aquaæ destill.	ʒiv.
M. ft. inject.		(See page 153.)

VIENNA PASTE.

R.	Caustic Lime.....	ʒv.
	Caustic Potash	ʒvj.
M. ft. pulv.		(See page 262.)

INJECTION IN GLEET.

R.	Zinci sulph.	
	Acid. Tannici	āā gr. ij.
	Aquaæ	ʒij.
M. ft. inject.		(See page 83.)

COPAIBA PASTE.

R.	Bals. Copaibæ	3vj.
	Mag. Calcinat.	ʒiss.
	Ext. Hyoscyam.	ʒss.
	Pulv. Camphoræ	3j.
	Theriacæ	3ij.
	Micæ Panis	ʒiss.
M. ft. Electuarium. Cap. Coch. j. Min. ter die.		See page 69.)

COPAIBA-AND-CUBEB PASTE.

R.	Pulv. Cubebæ	ʒiss.
	Bals. Copaibæ	ʒss.
	Theriacæ	3v.
	Ext. Hyoscyam.	3v.
	Mag. Calcinat.	ʒiss.
	Pulv. Camphoræ	3j.
M. ft. Electuarium.		(See page 71.)

COPAIBA ENEMA.

R.	Copaibæ	3v.
	Vitell. Ovi	j.
	Decoc. Papaveris	ʒij.

M. ft. enema.

(See page 75.)

CAMPHOR ENEMA FOR CHORDEE.

R. Pulv. Camphoræ	gr. viii.
Vitell. Ovi.....	j.
Mist. Amygdalæ	3j.
M. ft. enema.	(See page 75.)

CAMPHOR PILLS FOR CHORDEE.

R. Pulv. Camphoræ,	
Ext. Lactuce.....	aa Dij.
M. ft. pil. xx. Cap. iv. vel. vj. Omni nocte.	(See page 75.)

ALKALINE DRAUGHTS IN AFFECTIONS OF THE BLADDER.

R. Potass. Bicarb.....	Dij.
Syr. aurant.....	3j.
Aquaæ destill.....	3iss.
M. ft. haust. c. succi limonum coch. uno magno bis terve quotidie.	(See page 151.)

ACID MIXTURE IN AFFECTIONS OF THE BLADDER.

R. Acid. Nitrici. dilut.....	
Acid. Hydrochlorici.....	aa gutt. xx.
Aquaæ.....	2iv.
M. ft. mist. sumat 4tam partem bis quotidie.	(See page 152.)

SPRUCE BEER IN AFFECTIONS OF THE BLADDER.

R. Ess. Spruce	3ij.
Lemons.....	3, sliced.
Sugar	lbj. 3xij.
Boiling Water	2 gallons.
Let stand till cold, filter, and bottle.	(See page 153.)

WART-POWDER.

R. P. CEruginis,	
P. Sabinæ	aa 3ss.
M. ft. pulv.	(See page 229.)

IRON MIXTURE.

R. Fer. Potass. Tart.....	3j.
Aquaæ.....	3vi.
M. ft. mist. cujus cap. coch. ij. min. ter die.	(See page 274.)

OINTMENT FOR SKIN-AFFECTIONS.

R. Hyd. Subsulphat.....	Dss.
Unguent. Cetacei.....	3ss.
M. ft. unguent.	(See page 342.)

WASH FOR CONDYLOMATA.

R. Liq. Sodaæ Chlorinat	3ij. ad 3ss.
Aquaæ.....	3viii.
M. ft. lot.	(See page 344.)

POMATUM FOR THE HAIR.

R. Unguent. Cetacei	3i.
Tinct. Cantharidis.....	3ij.
Ol. Rorismarini,	
Ol. Lavendulæ.....	aa gutt. x.
Ess. Jasmini.....	3j.
M. ft. unguent. Sig. pomade for the hair.	(See page 351.)

OIL FOR THE HAIR.

R. Ol. Olivæ	3ss.
Unguent. Hyd. Nitrat.....	3j.
M. ft. liniment.	

(See page 351.)

LOTION FOR THE HAIR.

R. Ol. Ricini,	
Spirit. Rectificati,	
"Eau de Cologne".....	aa 3j.
M. ft. lot.	

(See page 351.)

GARGLES.

R. Acidi Hydrochlorici diluti	3j.
Decoct. Cinchonæ Cordifoliae.....	3iv.
M. ft. gargarisma.	

Or M. Ricord's favorite gargle may be employed :—

R. Infus. Cicutæ	3vij. (fol. 3ij. ad 3vij.)
Hyd. Bichlorid.....	gr. iij.
M. ft. gargarisma.	(See pages 356, 357.)

IODIDE OF POTASSIUM AND BITTERS.

R. Potass. Iodidi.....	3v.
Tt. Gent. C.	3ij.
Syrup. Simpl.	3xiv.
M. ft. mist. sumat coch. mag. unum ex cyatho ampio (<i>a small tumbler</i>) infus. quas-sia ter die.	(See page 375.)

R. Ras. Quassiae.....	3ij.
M. ft. chart. pro infus. Mitte chart. vj.	

I desire the patient to put the contents of one of these papers into a pint jug, and pour a pint of boiling water on them; and, allowing them to stand two hours, strain and drink the pint of bitter infusion at three draughts, having put into each small tumbler of the fluid one tablespoonful of the syrup.

FOR TERTIARY ULCERS.

R. Honey.....	12 parts.
Proto-ioduret of Mercury.....	1 part.

The same effects will be obtained if the margin of the ulcer be touched with the following solution of iodine :—

R. Tincture of Iodine.....	3ij.
Distilled Water.....	3vij.

(See page 377.)

EXPLANATION OF THE PLATES.

PLATE I.

FIG. 1.—EXCORIATION.

THE subject of this drawing had suffered many months from a greenish purulent discharge. She was a married woman, and attributed it to a disease which her husband had contracted about the same period. The introduction of the instrument was not attended with much pain. The characters of the excoriated condition of the epithelium, and the color of the secretion, show the analogy which it bears to balanitis in the male.

FIG. 2.—GRANULAR CONDITION.

THIS granular appearance of the os-uteri and vagina is a very marked instance of what is often to be met with in the hospitals of Paris and London; though generally in a less degree. The subject of it was a short stout female servant; she stated a discharge from the vagina had appeared eight months previously, and had continued to increase. The introduction of the instrument was very painful. The secretion was purulent, of a green color, of the consistence of cream, and so abundant that it ran out of the speculum. The analogy between this disease, and the granular condition of the conjunctiva in chronic affections of that membrane, can not escape the notice of the surgeon.

PLATE II.

FIG. 1.—ULCERATIONS.

THIS view was taken from a female, the wife of a shoemaker at Tours; she came to Paris in consequence of a discharge which had existed twenty months. This patient attributed it to abortion which occurred about that period; her husband, she stated, had suffered from several successive venereal complaints. Inoculation was tried on several and separate occasions, by M. Vidal de Cassis and myself, but the inoculated point healed in twenty-four hours, and as we always failed in producing the characteristic pustule, we concluded that these ulcers were not specific.

FIG. 2.—CATARRH.

THIS affection occurred in a young girl, a Belgian by birth, seventeen years of age, who presented a lymphatic temperament. She had been placed as servant to wait upon an old lady in Paris, and entered the hospital for a discharge. She stated, that previous to her arrival in Paris she had used much exercise in the open air, but during the last few months had hardly ever left the house, and lived in a very crowded and damp situation. The condition of the os-tincæ in young females is well shown, but the mucous membrane is paler than usual. The artist has very correctly represented the glairy white-of-egg-like discharge proceeding out of the os-uteri, in which we occasionally meet with globules of pus, a secretion very different from those witnessed in the other forms of blennorrhagia.

PLATE III.

FIG. 1.—BALANITIS.

THE character of balanitis may, with advantage, be studied in this plate. It was impossible to say if sexual intercourse or a want of cleanliness was the cause. The general erysipelatous redness of the glans is well seen, and the excoriated appearance so often met with in this affection.

FIG. 2.—VEGETATIONS.

THE subject of this complaint was a young man, twenty-four years of age. States he never has had either gonorrhœa or chancres. The characters of the complaint are well seen; the clusters of the granules are very florid, each granule presenting a conical appearance, though collected into masses.

FIG. 3.—ECZEMA.

THE appearances as seen in this plate are very characteristic of the affection; namely, the exudation of a serous fluid forming little scales, and the crevices are distinctly seen running between these little lamellæ, resulting from the drying of the exuded fluid. The history of the case was obscure; the patient advanced in life.

FIG. 4.—HERPES PRÆPUTIALIS.

HERPES in its various stages is delineated in this plate; commencing as a vesicular disease, its vesicles may ulcerate, and assume all the physical characters of chancre. The five or six vesicles will be seen on distinct patches of inflamed skin, differing in this respect from all other vesicular eruptions.

PLATE IV.

FIG. 1.—INOCULATION—SIMPLE UNCOMPLICATED CHANCRE.

THE original drawing was taken at the Venereal hospital, Paris, from a patient forty years of age. Connection had taken place six weeks previously. The patient had continued his usual occupation of a blacksmith until two days prior to entering the hospital. The characters of simple chancre are well seen, more or less circular in shape, with loss of substance; the edges of the sore neither elevated nor indurated, only slightly œdematos, with a red areola. The bottom as well as the sides of the sore are covered with tenacious yellow lymph.

The letters *a, b, c, d, e, f, g*, point to the progress of the artificial chancre produced by inoculation on the thigh with the secretion of fig. 1; *a* represents the inoculated point six hours after the operation, the other letters at intervals of twenty-four hours. Letter *h* is the chancre on the thigh about the tenth day.

FIG. 2.—FOLLICULAR CHANCRE.

THE drawing was taken two days after the appearance of the affection, and ten days after connection. We observe the coexistence of gonorrhœa; the pus is seen issuing from the urethra. The principal object, however, is the development of the virus in the follicles on the glans, resembling the appearance seen in figure, marked *a, b*.

PLATE V.

FIG. 1.—DIPHTHERITIC PHAGEDÆNIC CHANCRE.

THIS drawing was taken from a patient under the care of M. Ricord. A mason by trade; twenty-nine years of age. On entering the hospital this patient's constitution appeared broken down by the combined effect of dissolute habits and poverty. A thin ichorous discharge flows from under the prepuce, from which a piece of lint, soaked in opium, is seen projecting. A distinct chord was felt, extending upward, in the direction of the ganglionic bubo, which commenced as a pimple. It was impossible to collect dates from this person. On uncovering the glans it presented the appearance figured in fig. 1, the phagedæna is seen extending rather in breadth, than in depth; no induration accompanies it; but we observe some œdema around the ulceration. I should wish to call attention to the analogy of ulcerations in the same individual.

FIG. 2.—INDURATED PHAGEDÆNIC CHANCRE.

THIS patient, a tailor by trade, twenty-three years of age, of a beautiful transparent complexion, stated that six weeks previously he had contracted chancres; they healed under simple treatment, and the cicatrix became indurated, and then red; and lastly a sore began in the centre, which has since been extending; a similar sore existed on the other side of the glans. The molecular gangrene is very marked, and the transparent indurated circle around it, elevated and distinct from the surrounding skin, is well seen.

FIG. 3.—GANGRENOUS CHANCRE.

THIS affection occurred in a young man twenty years of age, a bargeman on the Seine; who drank freely. He stated that eighteen days previous to his admission, he had had connection with a prostitute at Rouen; fourteen days after a black spot shewed itself on the upper part of the prepuce, which had become swollen and red, and had increased to the extent seen in the drawing. The whole of the prepuce was destroyed in the succeeding thirty-six hours.

Fig. 4, shows the mouth of a person affected with mucous tubercles in different parts of the body and the white bleached mucous membrane is well shown.

PLATE VI.

SYPHILITIC AFFECTIONS OF THE MOUTH AND THROAT.

FIG. 1.—SECONDARY.

THIS patient entered St. Bartholomew's hospital in February last, under the care of Mr. Stanley. He stated that in the previous September he contracted chancres, which he cured with some aperient medicine. About Christmas he first perceived eruptions on the scalp, and his throat soon after became sore. I would direct attention to the analogy between the affections on the skin and the mucous membrane; they are seen to pass insensibly one into the other. In fact, the white and bleached superficial excoriation of the throat answers to the syphilitic lepra seen on the body. The speculum oris allowed us to gain a good view of the back part of the throat.

FIG. 2.—TERTIARY.

THE subject of this complaint was a young girl who had led a very dissipated life. About fifteen months previous to the time the drawing was made, she had had primary symptoms, and had been in various hospitals, but I could not learn that she had ever taken mercury. The principal features of the disease are well seen. The absence of papilla on the tongue, where ulceration had previously existed, excavated ulcers covered with a pulpy secretion, and surrounded with a red areola, bespeak at once the tertiary symptoms; this is made more evident, by the occurrence of rupia, which was present on various parts of her body.

PLATE VII.

(SEE FRONTISPICE.)

THIS plate (the frontispiece) represents different phases in the evolution of tubercles. In the middle of the cheek are maculae; on the upper lip and the external and lower palpebral region, are several small and separate tubercles; on the left side of the nose are confluent tubercles, which are thicker at the back part of the ala, and there form a large tubercle. On the cheek also are two pustules of ecthyma with tubercular base and surrounded by a dark red areola. On the lower pustule the crust appears.

PLATE VIII.

THIS plate represents those abnormal vegetations which sometimes occur in syphilitic patients and are seen around the anus, and sometimes even on the penis.

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Showing its Influence in Sustaining Life, and Producing Disease, with Remarks on the Ventilation of Houses, and the best Methods of Securing a Pure and Wholesome Atmosphere Inside of Dwellings, Churches, Court-Rooms, Workshops, &c.

BY JOHN H. GRISCOM, M. D.

"To any body blessed with eyes and reason it would seem the most natural thing in the world, that mankind should have discovered that pure air and plenty of it, was the element with which God had surrounded the earth, for the purpose of sustaining the breath of life in the beings he had placed upon its surface. But this first and rational thought gives place to amazement, when we carefully examine the dwellings of the human race, whether costly or simple, and observe how systematically all provision has been omitted for providing them with an adequate supply of the vital fluid. No man would deny, in the abstract, that after air has been once inhaled and ejected from the lungs, it is unsuitable for breathing again, until it has been mingled with the great ocean of atmosphere and received a fresh supply of the life-sustaining principle of which it has just been deprived. But it is easy to establish the fact, by mathematical demonstration, that the great majority of public apartments, the ordinary dwellings of families, and especially the sleeping-rooms of all classes, do not furnish one quarter the supply of fresh air requisite to the full and healthful play of the lungs, and the performance of their important functions upon the system. It is not difficult to understand that this air-famine must necessarily weaken and enfeeble the system, rendering it peculiarly susceptible to the absolutely poisonous vapor exhaled from the lungs, and the constant depredation of the particles of human bodies. And when we reflect that this evil has been exerting its baneful influence for thousands of years—indeed ever since men began to build and live in houses—accumulating its direful effects, and perpetuating them from generation to generation—we shall be prepared to admit that to the breathing of noxious and impure air, mankind owes most of the epidemic and endemic scourges with which it is afflicted.

Recently our medical and sanitary writers have been drawing the attention of the world to this subject, and endeavoring to arouse it to the momentous importance of ventilation and pure air. But no prejudices are so strong as those which endanger the lives of their possessors. In fact, prejudice and ignorance seem to be the pet vices of humanity, and are the more fondly cherished, and the more obstinately clung to, in proportion to their power of doing mischief.

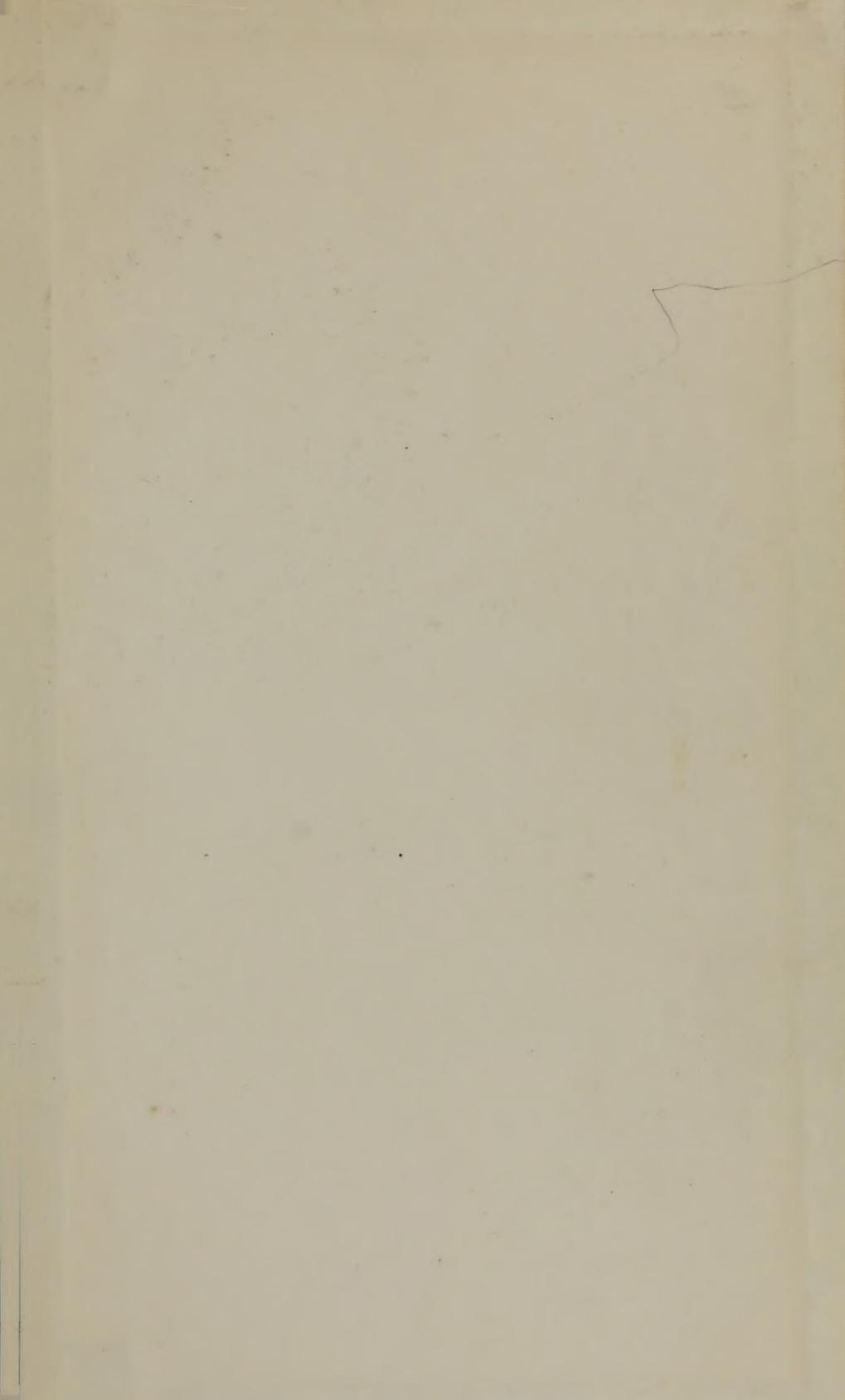
But such a book as this must, we think, effectually awaken society to a sense of its danger. It is understood to be from the pen of JOHN H. GRISCOM, M. D., agent of the Commissioners of Emigration. It is arranged in a plain, striking, and inductive method, and written in a clear, forcible, and perspicuous manner. It contains very little mere speculation, but an abundance of well-authenticated facts, from which conclusions the most logical and irresistible are drawn.

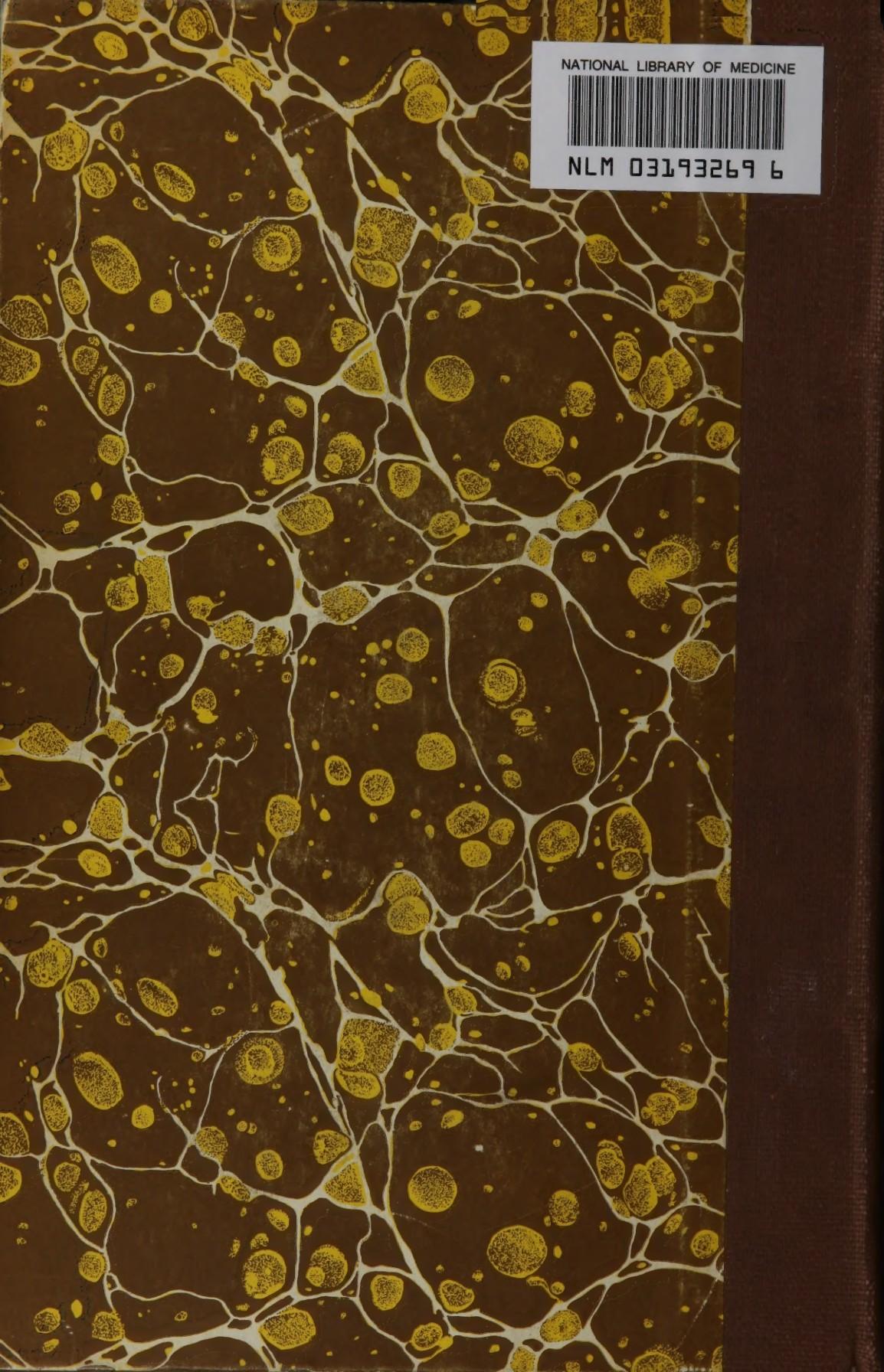
The work is divided into three parts. The first treats of the nature of the air, its functions in the animal economy, and the structure of the human system intended for its reception. The second part enumerates with brevity but frightful distinctness the evils imposed upon the world by impure air and the lack of ventilation; and the third is devoted to a clear, scientific, and practical discussion of the best means of ventilating every species of building. The whole book is a complete manual of the subject of which it treats; and we venture to say, that the builder or contriver of a dwelling, school-house, church, theatre, ship, or steamboat, who neglects to inform himself of the momentous truths it asserts, commits virtually a crime against society and his fellow-creatures.

But not the least valuable portion of this work, is that which contains directions for applying a sufficient ventilation to houses and other buildings already erected. There is scarcely a dwelling or an apartment in this choking, suffocating city, which might not be supplied, at a most insignificant expense, with fresh air and means for carrying off the dead and poisonous exhalations from the lungs. In this view the work possesses an incalculable value to all classes; and we trust that the public will, for its own sake, read it as universally and as thoughtfully as it deserves."—*N. Y. Metropolis.*

"We should be glad to believe that this brief notice would induce our readers to buy this work, and read it thoroughly and attentively. Certainly this is a matter of great, of paramount importance. We pay doctors to dose and drug us; we awake from a feverish and disturbed sleep, with a sensation of mental and physical heaviness and depression which finds no relief until we go into the pure air, outside our ill-ventilated dwellings; and yet we learn not wisdom from this painful and wasteful experience. We see our little ones, pale, and weak, and dejected, inside of our *infernally* (there is no other word to express the truth) constructed dwellings, and we take them into the open air, and lo! the color comes back to their cheeks, and the smiles chase one another over their young faces—yet we seem not to heed the warning and instruction which nature, more kind and more potent than all the doctors and all their drugs, thus freely gives us. When shall we learn that God in giving us life, has also, and as beneficially, provided the means of fostering and nourishing life? When shall we learn to estimate at their proper value, pure water and pure air, which God provided for man before he made man, and a very long time before he permitted the existence of a doctor? We commend the Uses and Abuses of Air to our readers, assuring them that they will find it to contain directions for the ventilation of dwellings, which every one who values health and comfort should put in practice."—*N. Y. Dispatch.*

Price, in Paper Covers, 50 cents—Bound, 75 cents.



A detailed microscopic image showing a dense arrangement of cells. The cells are roughly circular with irregular, wavy boundaries. They contain numerous small, yellowish-brown granules of varying sizes. Some larger, more centrally located granules are visible. The overall texture is somewhat mottled and organic.

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